ACCREDITED
Certificate # 3939.01

FCC TEST REPORT

(PART 90S)

Applicant:	Quectel Wireless Solutions Co., Ltd.
Address:	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233

Manufacturer or Supplier:	Quectel Wireless Solutions Co., Ltd.
Address:	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233
Product:	LTE Module
Brand Name:	Quectel
Model Name:	SC66-A
FCC ID:	XMR201908SC66A
Date of tests:	Jul. 13, 2019 ~ Sept. 06, 2019

The tests have been carried out according to the requirements of the following standard:

☒ **FCC Part 90, Subpart S** ☒ **ANSI/TIA/EIA-603- D**
☒ **FCC Part 2** ☒ **ANSI/TIA/EIA-603-E** ☒ **ANSI C63.26-2015**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Alex Chen Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
Alex	Luke Lu
Date: Sept. 12, 2019	Date: Sept. 12, 2019

This report is governed by, and incorporates by reference, CPS Conditions of Service as posted at the date of issuance of this report at http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute you unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

TABLE OF CONTENTS

RELEASE CONTROL RECORD 4

1 SUMMARY OF TEST RESULTS 5

1.1 MEASUREMENT UNCERTAINTY 5
1.2 TEST SITE AND INSTRUMENTS 6

2 GENERAL INFORMATION 7

2.1 GENERAL DESCRIPTION OF EUT 7
2.2 CONFIGURATION OF SYSTEM UNDER TEST 9
2.3 DESCRIPTION OF TEST MODES 10
2.4 GENERAL DESCRIPTION OF APPLIED STANDARDS 14

3 TEST TYPES AND RESULTS 15

3.1 OUTPUT POWER MEASUREMENT 15
3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT 15
3.1.2 TEST PROCEDURES 15
3.1.3 TEST SETUP 16
3.1.4 TEST RESULTS 16
3.2 FREQUENCY STABILITY MEASUREMENT 26
3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT 26
3.2.2 TEST PROCEDURE 26
3.2.3 TEST SETUP 26
3.2.4 TEST RESULTS 27
3.3 OCCUPIED BANDWIDTH MEASUREMENT 33
3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT 33
3.3.2 TEST SETUP 33
3.3.3 TEST PROCEDURES 33
3.3.4 TEST RESULTS 34
3.4 PEAK TO AVERAGE RATIO 40
3.4.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT 40
3.4.2 TEST SETUP 40
3.4.3 TEST PROCEDURES 40
3.4.4 TEST RESULTS 41
3.5 EMISSION MASK MEASUREMENT 44
3.5.1 LIMITS OF EMISSION MASK MEASUREMENT 44
3.5.2 TEST SETUP 44
3.5.3 TEST PROCEDURES 45
3.5.4 TEST RESULTS 46
3.6 CONDUCTED SPURIOUS EMISSIONS 58
3.6.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT 58
3.6.2 TEST PROCEDURE 58
3.6.3 TEST SETUP 58
3.6.4 TEST RESULTS 59
3.7 RADIATED EMISSION MEASUREMENT 65
3.7.1 LIMITS OF RADIATED EMISSION MEASUREMENT 65
3.7.2 TEST PROCEDURES 65
3.7.3 DEVIATION FROM TEST STANDARD 65
3.7.4 TEST SETUP 66
3.7.5 TEST RESULTS 67

4 INFORMATION ON THE TESTING LABORATORIES 89

5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB 90

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF190522W005-5	Original release	Sept. 12, 2019

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 90S & Part 2			
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**	**REMARK**
2.1046 90.635(b)	Maximum Peak Output Power	PASS	Compliance
2.1055 90.213	Frequency Stability	PASS	Compliance
2.1049 90.209	Occupied Bandwidth	PASS	Compliance
2.1051 90.691	Emission Masks	PASS	Compliance
2.1051 90.691	Conducted Spurious Emissions	PASS	Compliance
2.1053 90.691	Radiated Spurious Emissions	PASS	Compliance

1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	UNCERTAINTY
Frequency Stability	±76.97Hz
Radiated emissions & Radiated Power (30MHz~1GMHz)	±4.98dB
Radiated emissions & Radiated Power (1GMHz ~6GMHz)	±4.70dB
Radiated emissions (6GMHz ~18GMHz)	±4.60dB
Radiated emissions (18GMHz ~40GMHz)	±4.12dB
Conducted emissions	±4.01dB
Occupied Channel Bandwidth	±43.58KHz
Conducted Output power	±2.06dB
Band Edge Measurements	±4.70dB
Emission Mask Measurements	±4.48dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Feb. 26,19	Feb. 25,20
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510322	Feb. 26,19	Feb. 25,20
Bilog Antenna 1	ETS-LINDGREN	3143B	00161964	Feb. 26,19	Feb. 25,20
Bilog Antenna 2	ETS-LINDGREN	3143B	00161965	Feb. 26,19	Feb. 25,20
Horn Antenna 1	ETS-LINDGREN	3117	00168728	Feb. 26,19	Feb. 25,20
Horn Antenna 2	ETS-LINDGREN	3117	00168692	Nov. 30, 18	Nov. 29, 19
Loop antenna	Daze	ZN30900A	0708	Oct. 23,18	Oct. 22, 19
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Nov. 21, 18	Nov. 20, 19
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 26,19	Feb. 25,20
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jun. 24,19	Jun. 23,20
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jun. 24,19	Jun. 23,20
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Jun. 24,19	Jun. 23,20
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	Feb. 26,19	Feb. 25,20
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jun. 24,19	Jun. 23,20
Power Meter	Anritsu	ML2495A	1506002	Feb. 26,19	Feb. 25,20
Power Sensor	Anritsu	MA2411B	1339352	Feb. 26,19	Feb. 25,20
Humid & Temp Programmable Tester	Juyi	ITH-120-45-CP-AR	IAA1504-001	Jun. 24,19	Jun. 23,20
MXG Analog Microvave Signal Generator	KEYSIGHT	N5183A	MY50143024	Feb. 26,19	Feb. 25,20

NOTE: 1. The calibration interval of the above test instruments is 12 months or 24 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

2. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.

3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.

4. The FCC Site Registration No. is 525120; The Designation No. is CN1171.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

EUT	LTE Module	
BRAND NAME	Quectel	
MODEL NAME	SC66-A	
POWER SUPPLY	V_{min}=3.55Vdc, V_{nor}=4Vdc, V_{max}=4.4Vdc	
MODULATION TECHNOLOGY	**LTE**	QPSK, 16QAM
FREQUENCY RANGE	**LTE Band 14 Channel Bandwidth: 5MHz**	790.5MHz ~ 795.5MHz
	LTE Band 14 Channel Bandwidth: 10MHz	793MHz
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	814.7MHz ~ 823.3MHz
	LTE Band 26 (Channel Bandwidth: 3MHz)	815.5MHz ~ 822.5MHz
	LTE Band 26 (Channel Bandwidth: 5MHz)	816.5MHz ~ 821.5MHz
	LTE Band 26 (Channel Bandwidth: 10MHz)	819MHz
MAX. ERP POWER	**LTE Band 14 Channel Bandwidth: 5MHz**	268.53 mW
	LTE Band 14 Channel Bandwidth: 10MHz	269.77 mW
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	189.67 mW
	LTE Band 26 (Channel Bandwidth: 3MHz)	187.07 mW
	LTE Band 26 (Channel Bandwidth: 5MHz)	187.07 mW
	LTE Band 26 (Channel Bandwidth: 10MHz)	187.07 mW

EMISSION DESIGNATOR	**LTE Band 14 (Channel Bandwidth: 5MHz)**	QPSK: 4M48G7D
		16QAM: 4M47W7D
	LTE Band 14 (Channel Bandwidth: 10MHz)	QPSK: 8M96G7D
		16QAM: 8M93W7D
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	QPSK: 1M09G7D
		16QAM: 1M08W7D
	LTE Band 26 (Channel Bandwidth: 3MHz)	QPSK: 2M69G7D
		16QAM: 2M69W7D
	LTE Band 26 (Channel Bandwidth: 5MHz)	QPSK: 4M48G7D
		16QAM: 4M47W7D
	LTE Band 26 (Channel Bandwidth: 10MHz)	QPSK: 8M93G7D
		16QAM: 8M91W7D
ANTENNA TYPE	Fixed External Antenna with 3.63dBi gain for band 14 Fixed External Antenna with 2.13dBi gain for band 26	
HW VERSION	R1.0	
SW VERSION	SC66ANAR01A06	
I/O PORTS	Refer to user's manual	
DATA CABLE	N/A	

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

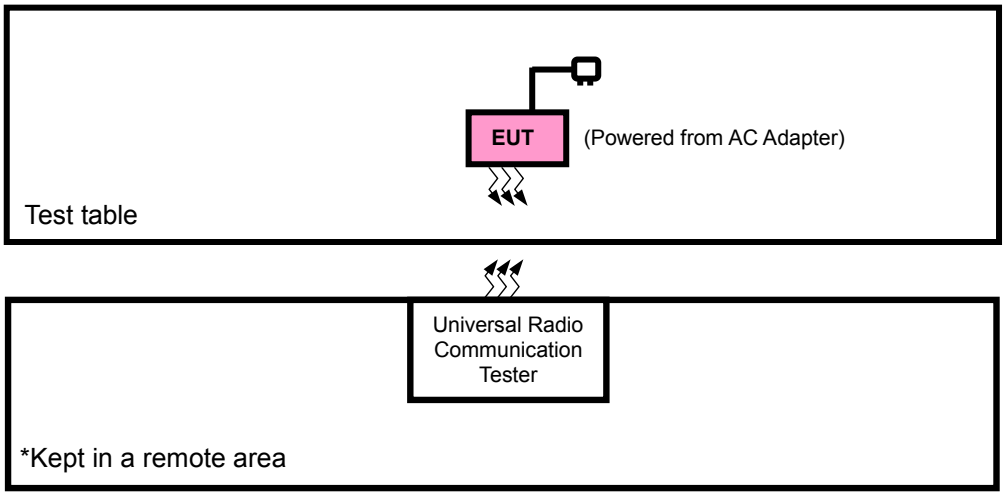
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

3. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

MODULATION MODE	TX FUNCTION
LTE	1TX/1RX

2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION TEST



2.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Adapter	JINGSAI	CLS-050200	N/A	N/A
2	DC source	LONG WEI	PS-6403D	010934269	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	Unshielded, Detachable 1.8m
2	DC Line: Unshielded, Detachable 1.0m

2.4 DESCRIPTION OF TEST MODES

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports The worst case in ERP/EIRP and radiated emission was found when positioned on X-plane for LTE. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	DESCRIPTION
-	**EUT + Adapter with LTE link**

LTE BAND 14 MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
EIRP	23305 to 23355	23305, 23330, 23355	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	23330	23330	10MHz	QPSK, 16QAM	1 RB / 0RB Offset
FREQUENCY STABILITY	23305 to 23355	23305, 23355	5MHz	QPSK	1 RB / 0 RB Offset
	23330	23330	10MHz	QPSK	1 RB / 0RB Offset
OCCUPIED BANDWIDTH	23305 to 23355	23305, 23330, 23355	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
	23330	23330	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
PEAK TO AVERAGE RATIO	23305 to 23355	23305, 23330, 23355	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	23330	23330	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
BAND EDGE	23305 to 23355	23305	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
					25 RB / 0 RB Offset
		23355	5MHz	QPSK, 16QAM	1 RB / 24 RB Offset
					25 RB / 0 RB Offset
	23330	23330	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
					50 RB / 0 RB Offset
		23330	10MHz	QPSK, 16QAM	1 RB / 49 RB Offset

					50 RB / 0 RB Offset
CONDCUDETED EMISSION	23305 to 23355	23305, 23330, 23355	5MHz	QPSK	1 RB / 0 RB Offset
	23330	23330	10MHz	QPSK	1 RB / 0RB Offset
RADIATED EMISSION	23305 to 23355	23305, 23330, 23355	5MHz	QPSK	1 RB / 0 RB Offset
	23330	23330	10MHz	QPSK	1 RB / 0RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

LTE BAND 26

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	ERP	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26705 to 26775	26705, 26740, 26775	3MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26715 to 26765	26715, 26740, 26765	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26740	26740	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	26697 to 26783	26697, 26783	1.4MHz	QPSK	1 RB / 0 RB Offset
		26705 to 26775	26705, 26775	3MHz	QPSK	1 RB / 0 RB Offset
		26715 to 26765	26715, 26765	5MHz	QPSK	1 RB / 0 RB Offset
		26740	26740	10MHz	QPSK	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		26705 to 26775	26705, 26740, 26775	3MHz	QPSK, 16QAM	15 RB / 0 RB Offset
		26715 to 26765	26715, 26740, 26765	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		26740	26740	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
B	PEAK TO AVERAGE RATIO	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26705 to 26775	26705, 26740, 26775	3MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26715 to 26765	26715, 26740, 26765	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26740	26740	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
B	BAND EDGE	26697 to 26783	26697	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			26783	1.4MHz	QPSK, 16QAM	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		26705 to 26775	26705	3MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			26775	3MHz	QPSK, 16QAM	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		26715 to 26765	26715	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			26765	5MHz	QPSK, 16QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		26740	26740	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			26740	10MHz	QPSK, 16QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
B	CONDCUDETED EMISSION	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK	1 RB / 0 RB Offset
		26705 to 26775	26705, 26740, 26775	3MHz	QPSK	1 RB / 0 RB Offset
		26715 to 26765	26715, 26740, 26765	5MHz	QPSK	1 RB / 0 RB Offset
		26740	26740	10MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK	1 RB / 0 RB Offset
		26705 to 26775	26740	3MHz	QPSK	1 RB / 0 RB Offset
		26715 to 26765	26740	5MHz	QPSK	1 RB / 0 RB Offset
		26740	26740	10MHz	QPSK	1 RB / 0 RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
EIRP(ERP)	23deg. C, 70%RH	5Vdc from adapter	Star Le
FREQUENCY STABILITY	23deg. C, 70%RH	DC 3.55V/4V/4.4V	Walker Ye
OCCUPIED BANDWIDTH	23deg. C, 70%RH	5Vdc from adapter	Walker Ye
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	5Vdc from adapter	Walker Ye
BAND EDGE	23deg. C, 70%RH	5Vdc from adapter	Walker Ye
CONDCUDETED EMISSION	23deg. C, 70%RH	5Vdc from adapter	Walker Ye
RADIATED EMISSION	23deg. C, 70%RH	5Vdc from adapter	Star Le

2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 90

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-D

ANSI/TIA/EIA-603-E

ANSI C63.26-2015

NOTE: All test items have been performed and recorded as per the above standards.

3 TEST TYPES AND RESULTS

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Per FCC Part 90.635(a)(b)
Mobile stations are limited to 100 watts e.r.p. Portable stations are limited to 3 watts e.r.p.

3.1.2 TEST PROCEDURES

EIRP / ERP MEASUREMENT:

Per KDB 971168 D01 Power Meas License Digital Systems v03r01 or subclause 5.2.5.5 of ANSI C63.26-2015, the relevant equation for determing the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

ERP or EIRP = $P_{Meas} + G_T - L_C$

Where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as P_{Meas}, typically dBW or dBm);

P_{Meas} = measured transmitter output power or PSD, in dBm or dBW;

G_T = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

CONDUCTED POWER MEASUREMENT:

a. The EUT was set up for the maximum power with LTE link data modulation and link up with simulator.
b. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

3.1.3 TEST SETUP

CONDUCTED POWER MEASUREMENT:

3.1.4 TEST RESULTS

AVERAGE CONDUCTED OUTPUT POWER (dBm)

LTE BAND 14

Band/BW	Modulation	RB Size	RB Offset	Low CH 23305 Frequency 790.5 MHz	Mid CH 23330 Frequency 793 MHz	High CH 23355 Frequency 795.5 MHz	MPR
14/ 5	QPSK	1	0	22.68	22.66	22.63	0
		1	12	22.81	22.75	22.80	0
		1	24	22.73	22.70	22.71	0
		12	0	21.78	21.77	21.77	1
		12	6	21.78	21.85	21.81	1
		12	13	21.77	21.76	21.80	1
		25	0	21.80	21.84	21.81	1
	16QAM	1	0	22.00	22.02	22.05	1
		1	12	22.10	22.16	22.13	1
		1	24	22.14	22.08	22.12	1
		12	0	20.88	20.90	20.83	2
		12	6	20.92	20.96	20.91	2
		12	13	20.87	20.89	20.92	2
		25	0	20.89	20.88	20.90	2

Band/BW	Modulation	RB Size	RB Offset	Mid CH 23330 Frequency 793 MHz	MPR
14/ 10	QPSK	1	0	22.73	0
		1	24	22.83	0
		1	49	22.78	0
		25	0	21.82	1
		25	12	21.86	1
		25	25	21.81	1
		50	0	21.86	1
	16QAM	1	0	22.07	1
		1	24	22.18	1
		1	49	22.16	1
		25	0	20.96	2
		25	12	20.98	2
		25	25	20.94	2
		50	0	20.95	2

LTE BAND 26

LTE Band 26							
BW	Modulation	RB Size	RB Offset	Low CH 26697 Frequency 814.7 MHz	Mid CH 26740 Frequency 819 MHz	High CH 26783 Frequency 823.3 MHz	MPR
1.4	QPSK	1	0	22.65	22.65	22.50	0
		1	2	22.73	22.74	22.59	0
		1	5	22.76	22.70	22.55	0
		3	0	22.72	21.75	22.48	0
		3	1	22.80	21.79	22.57	0
		3	3	22.80	21.79	22.53	0
		6	0	21.83	21.83	21.68	1
	16QAM	1	0	22.00	21.98	21.83	1
		1	2	22.06	22.05	21.90	1
		1	5	22.04	22.07	21.92	1
		3	0	21.87	20.85	21.82	1
		3	1	21.81	20.87	21.89	1
		3	3	21.88	20.84	21.91	1
		6	0	20.79	20.83	20.68	2

LTE Band 26							
BW	Modulation	RB Size	RB Offset	Low CH CH26705 Frequency 815.5MHz	Mid CH CH26740 Frequency 819.0MHz	High CH CH26775 Frequency 822.5MHz	MPR
3	QPSK	1	0	22.67	22.65	22.54	0
		1	7	22.69	22.74	22.63	0
		1	14	22.72	22.70	22.59	0
		8	0	21.71	21.75	21.64	1
		8	3	21.73	21.79	21.68	1
		8	7	21.77	21.79	21.68	1
		15	0	21.80	21.83	21.72	1
	16QAM	1	0	21.97	21.98	21.87	1
		1	7	22.03	22.05	21.94	1
		1	14	22.07	22.07	21.96	1
		8	0	20.83	20.85	20.74	2
		8	3	20.86	20.87	20.76	2
		8	7	20.90	20.84	20.73	2
		15	0	20.79	20.83	20.72	2

LTE Band 26							
BW	Modulation	RB Size	RB Offset	Low CH CH26715 Frequency 816.5MHz	Mid CH CH26740 Frequency 819.0MHz	High CH CH26765 Frequency 821.5MHz	MPR
5	QPSK	1	0	22.68	22.65	22.57	0
		1	12	22.74	22.74	22.66	0
		1	24	22.73	22.70	22.62	0
		12	0	21.74	21.75	21.67	1
		12	6	21.73	21.79	21.71	1
		12	13	21.81	21.79	21.71	1
		25	0	21.78	21.83	21.75	1
	16QAM	1	0	21.98	21.98	21.90	1
		1	12	22.00	22.05	21.97	1
		1	24	22.07	22.07	21.99	1
		12	0	20.83	20.85	20.77	2
		12	6	20.83	20.87	20.79	2
		12	13	20.85	20.84	20.76	2
		25	0	20.79	20.83	20.75	2

LTE Band 26					
BW	Modulation	RB Size	RB Offset	Mid CH CH26740 Frequency 819.0MHz	MPR
10	QPSK	1	0	22.65	0
		1	24	22.74	0
		1	49	22.70	0
		25	0	21.75	1
		25	12	21.79	1
		25	25	21.79	1
		50	0	21.83	1
	16QAM	1	0	21.98	1
		1	24	22.05	1
		1	49	22.07	1
		25	0	20.85	2
		25	12	20.87	2
		25	25	20.84	2
		50	0	20.83	2

ERP

LTE BAND 14

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
23305	790.5	22.81	3.63	24.29	268.53	3
23330	793.0	22.75	3.63	24.23	264.85	3
23355	795.5	22.80	3.63	24.28	267.92	3

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
23305	790.5	22.14	3.63	23.62	230.14	3
23330	793.0	22.16	3.63	23.64	231.21	3
23355	795.5	22.13	3.63	23.61	229.61	3

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
23330	793.0	22.83	3.63	24.31	269.77	3

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
23330	793.0	22.18	3.63	23.66	232.27	3

LTE BAND 26

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26797	814.7	22.80	2.13	22.78	189.67	7
26840	819.0	22.74	2.13	22.72	187.07	7
26883	823.3	22.59	2.13	22.57	180.72	7

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26797	814.7	22.04	2.13	22.02	159.22	7
26840	819.0	22.07	2.13	22.05	160.32	7
26883	823.3	21.92	2.13	21.90	154.88	7

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26805	815.5	22.72	2.13	22.70	186.21	7
26840	819.0	22.74	2.13	22.72	187.07	7
26875	822.5	22.63	2.13	22.61	182.39	7

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26805	815.5	22.07	2.13	22.05	160.32	7
26840	819.0	22.07	2.13	22.05	160.32	7
26875	822.5	21.96	2.13	21.94	156.31	7

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26815	816.5	22.74	2.13	22.72	187.07	7
26840	819.0	22.74	2.13	22.72	187.07	7
26865	821.5	22.66	2.13	22.64	183.65	7

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26815	816.5	22.07	2.13	22.05	160.32	7
26840	819.0	22.07	2.13	22.05	160.32	7
26865	821.5	21.99	2.13	21.97	157.4	7

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26840	819.0	22.74	2.13	22.72	187.07	7

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26840	819.0	22.07	2.13	22.05	160.32	7

REMARKS: 1. ERP Output Power (dBm) = SPA LVL (dBm) + Correction Factor (dB) -2.15(dB).
2. Correction factor (dB) = Free Space Loss + Antenna Factor + Cable Loss

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

The frequency stability of mobile, portable and control transmitters operating in the wideband segment must be 1.25 parts per million or better when AFC is locked to a base station, and 5 parts per million or better when AFC is not locked

3.2.2 TEST PROCEDURE

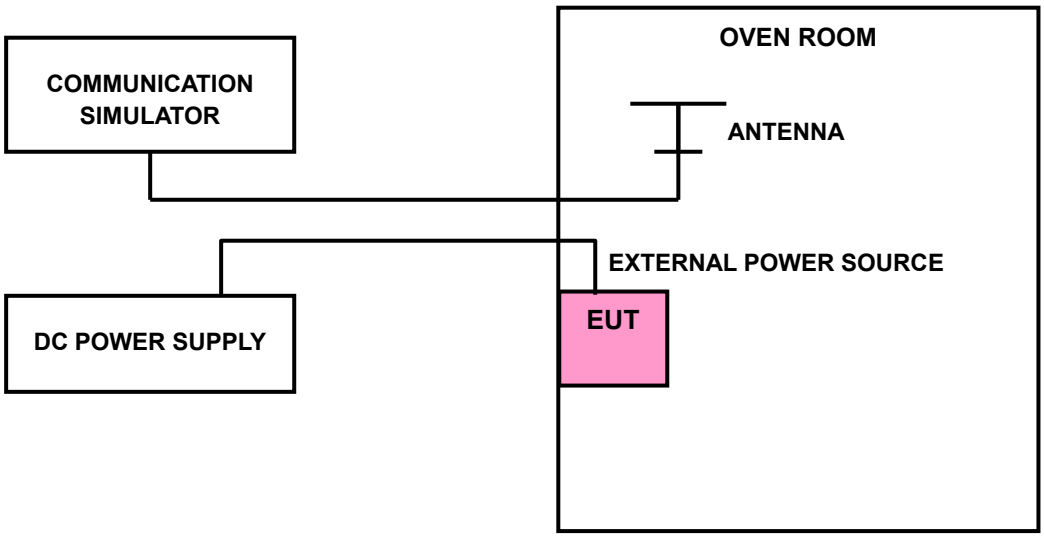
a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.

b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.

c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.

3.2.3 TEST SETUP



3.2.4 TEST RESULTS

LTE BAND 14

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0021	0.0025	2.5
V_{min}	-0.0023	-0.0030	2.5
V_{max}	0.0021	0.0021	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 3.4Vdc to 4.2Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0118	-0.0110	2.5
-20	-0.0111	-0.0100	2.5
-10	-0.0086	-0.0083	2.5
0	-0.0076	-0.0075	2.5
10	-0.0049	-0.0044	2.5
20	-0.0041	-0.0041	2.5
30	-0.0040	-0.0040	2.5
40	-0.0022	-0.0021	2.5
50	-0.0005	-0.0004	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	10MHz	LIMIT (ppm)
	FREQUENCY ERROR (ppm)	
	Channel 23330	
V_{nor}	0.0026	2.5
V_{min}	-0.0030	2.5
V_{max}	0.0025	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 3.4Vdc to 4.2Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	10MHz	LIMIT (ppm)
	FREQUENCY ERROR (ppm)	
	Channel 23330	
-30	-0.0121	2.5
-20	-0.0104	2.5
-10	-0.0084	2.5
0	-0.0076	2.5
10	-0.0056	2.5
20	-0.0038	2.5
30	-0.0034	2.5
40	-0.0020	2.5
50	-0.0006	2.5

LTE BAND 26

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	1.4MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0024	0.0027	2.5
V_{min}	-0.0031	-0.0031	2.5
V_{max}	0.0025	0.0025	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 3.4Vdc to 4.2Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	1.4MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0117	-0.0116	2.5
-20	-0.0111	-0.0107	2.5
-10	-0.0082	-0.0083	2.5
0	-0.0079	-0.0074	2.5
10	-0.0048	-0.0047	2.5
20	-0.0044	-0.0041	2.5
30	-0.0043	-0.0028	2.5
40	-0.0022	-0.0017	2.5
50	-0.0006	-0.0005	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	3MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0026	0.0026	2.5
V_{min}	-0.0031	-0.0031	2.5
V_{max}	0.0024	0.0025	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 3.4Vdc to 4.2Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	3MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0124	-0.0113	2.5
-20	-0.0100	-0.0112	2.5
-10	-0.0085	-0.0083	2.5
0	-0.0076	-0.0077	2.5
10	-0.0055	-0.0049	2.5
20	-0.0042	-0.0039	2.5
30	-0.0029	-0.0043	2.5
40	-0.0015	-0.0016	2.5
50	-0.0006	-0.0004	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0025	0.0025	2.5
V_{min}	-0.0031	-0.0032	2.5
V_{max}	0.0027	0.0026	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 3.4Vdc to 4.2Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0116	-0.0119	2.5
-20	-0.0109	-0.0103	2.5
-10	-0.0087	-0.0082	2.5
0	-0.0075	-0.0078	2.5
10	-0.0051	-0.0045	2.5
20	-0.0044	-0.0043	2.5
30	-0.0043	-0.0042	2.5
40	-0.0022	-0.0018	2.5
50	-0.0002	-0.0002	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	10MHz	LIMIT (ppm)
	FREQUENCY ERROR (ppm)	
	Middle Channel	
V_{nor}	0.0026	2.5
V_{min}	-0.0031	2.5
V_{max}	0.0026	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 3.4Vdc to 4.2Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

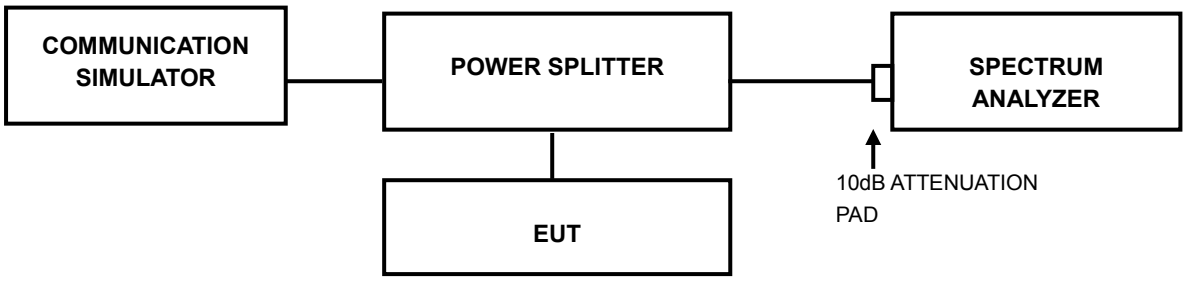
TEMP. (℃)	10MHz	LIMIT (ppm)
	FREQUENCY ERROR (ppm)	
	Middle Channel	
-30	-0.0114	2.5
-20	-0.0107	2.5
-10	-0.0085	2.5
0	-0.0076	2.5
10	-0.0056	2.5
20	-0.0044	2.5
30	-0.0041	2.5
40	-0.0017	2.5
50	-0.0002	2.5

3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

3.3.2 TEST SETUP



3.3.3 TEST PROCEDURES

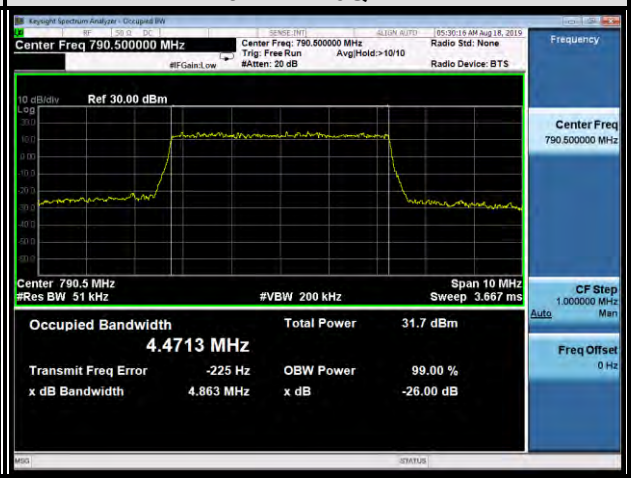
a. The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

b. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

3.3.4 TEST RESULTS

LTE BAND 14

CHANNEL BANDWIDTH: 5MHz					
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		26dB bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
23305	790.5	4.48	4.47	4.90	4.86
23330	793.0	4.48	4.46	4.88	4.86
23355	795.5	4.48	4.47	4.90	4.85

SPECTRUM PLOT OF WORST VALUE	
5MHz / QPSK	5MHz / 16QAM
	

LTE BAND 14

CHANNEL BANDWIDTH: 10MHz					
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		26dB bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
NA	NA	-	-	-	-
23330	793	8.96	8.93	9.65	9.63
NA	NA	-	-	-	-

SPECTRUM PLOT OF WORST VALUE

10MHz / QPSK

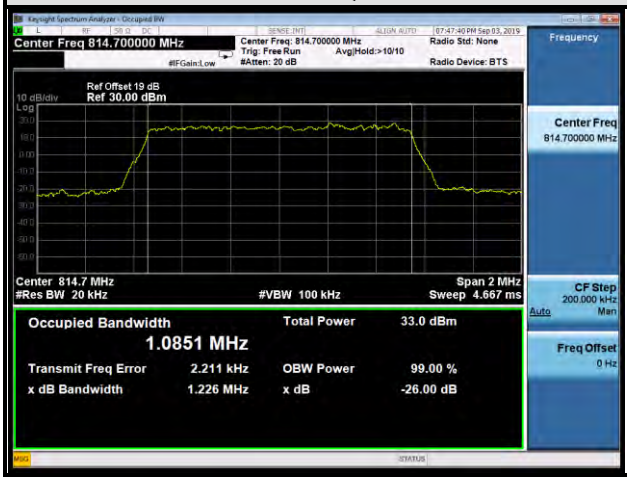
10MHz / 16QAM

LTE BAND 26

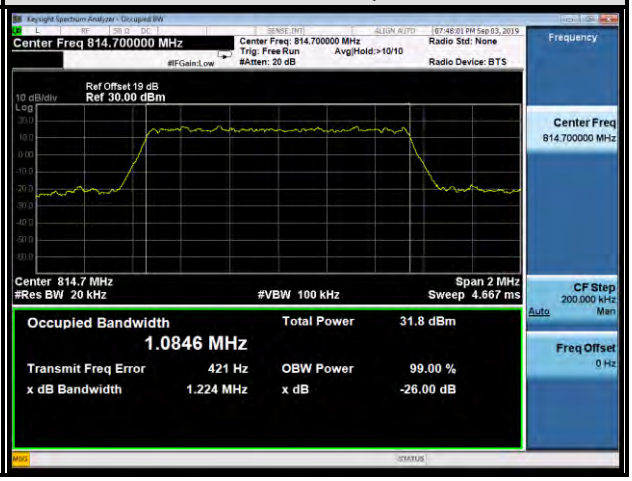
CHANNEL BANDWIDTH: 1.4MHz					
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		26dB bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
26697	814.7	1.09	1.08	1.23	1.22
26740	819.0	1.09	1.08	1.23	1.23
26783	823.3	1.08	1.08	1.22	1.22

SPECTRUM PLOT OF WORST VALUE

1.4MHz / QPSK



1.4MHz / 16QAM

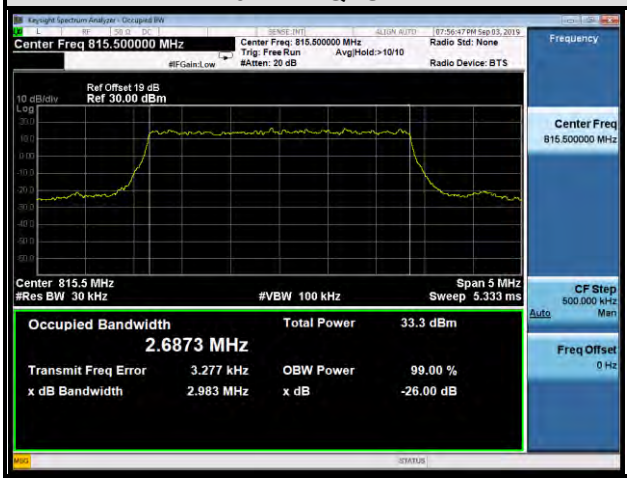


LTE BAND 26

CHANNEL BANDWIDTH: 3MHz					
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		26dB bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
26705	815.5	2.69	2.68	2.98	2.93
26740	819.0	2.69	2.69	2.99	2.93
26775	822.5	2.69	2.68	2.97	2.94

SPECTRUM PLOT OF WORST VALUE

3MHz / QPSK

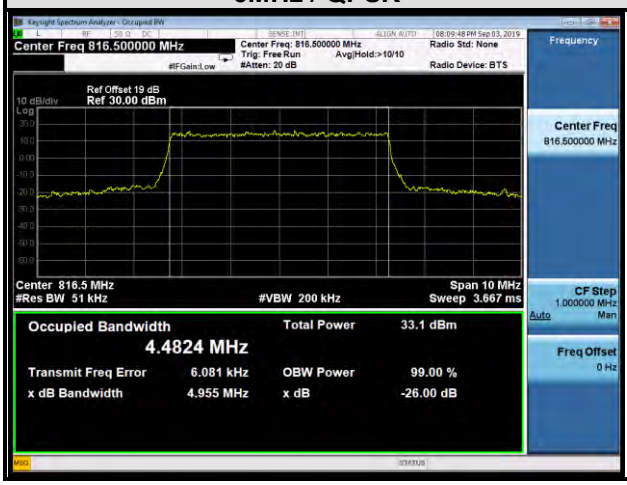


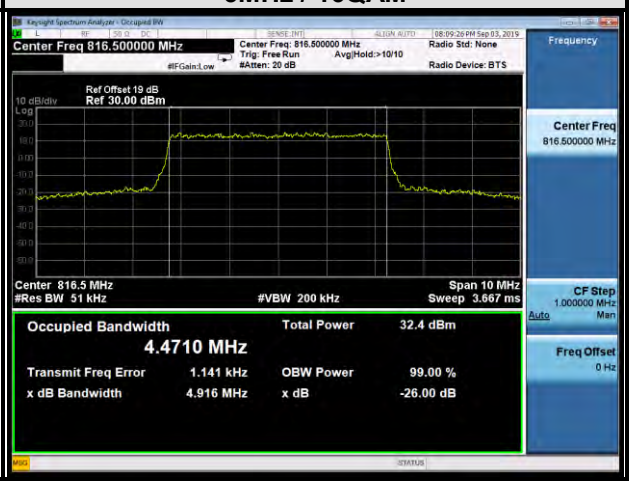
3MHz / 16QAM

LTE BAND 26

CHANNEL BANDWIDTH: 5MHz					
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		26dB bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
26715	816.5	4.48	4.47	4.96	4.92
26740	819	4.48	4.47	4.88	4.90
26765	821.5	4.48	4.47	4.90	4.89

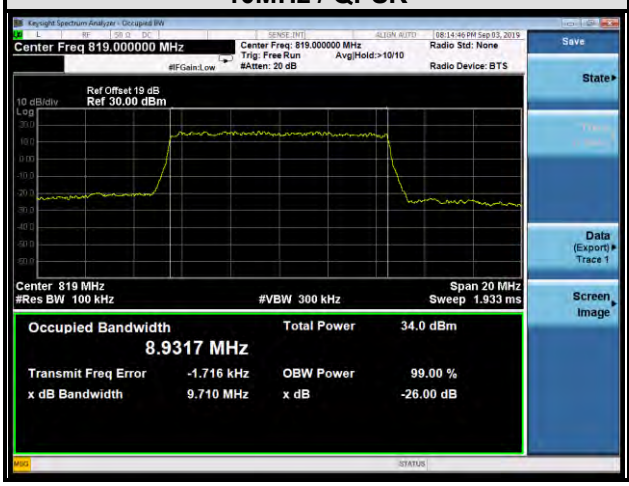
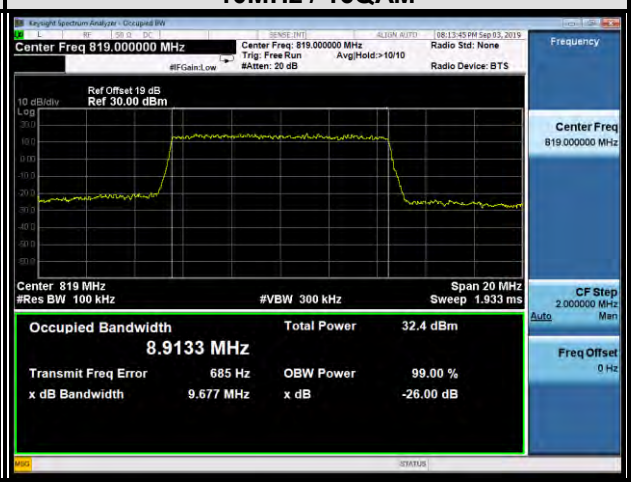
SPECTRUM PLOT OF WORST VALUE	
5MHz / QPSK	5MHz / 16QAM





LTE BAND 26

CHANNEL BANDWIDTH:10 MHz					
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		26dB bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
N/A	N/A	-	-	-	-
26740	819	8.93	8.91	9.71	9.68
N/A	N/A	-	-	-	-

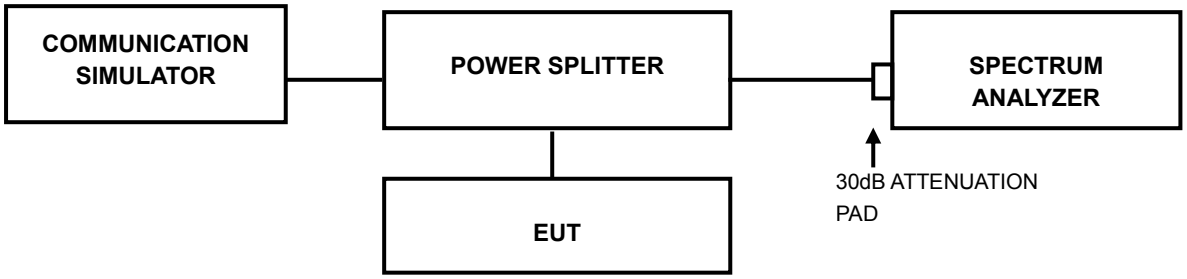
SPECTRUM PLOT OF WORST VALUE	
10MHz / QPSK	10MHz / 16QAM
	

3.4 PEAK TO AVERAGE RATIO

3.4.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

In addition, the peak to average power ratio (PAPR) of the equipment shall not exceed 13 dB for more than 0.1% of the time, using a signal that corresponds to the highest PAPR during periods of continuous transmission.

3.4.2 TEST SETUP



3.4.3 TEST PROCEDURES

1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

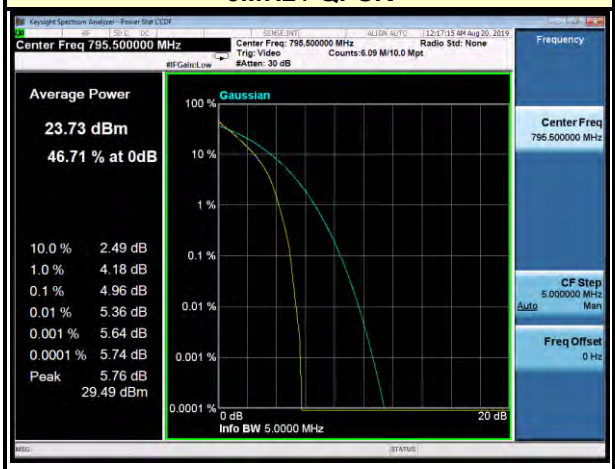
3.4.4 TEST RESULTS

LTE BAND 14

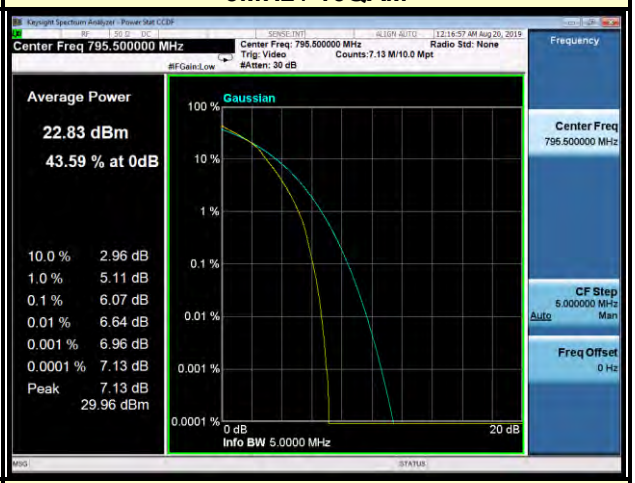
CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM			QPSK	16QAM
23305	790.5	4.72	5.72	/	/	/	/
23330	793.0	4.81	5.85	23330	793	4.85	5.89
23355	795.5	4.96	6.07	/	/	/	/

SPECTRUM PLOT OF WORST VALUE

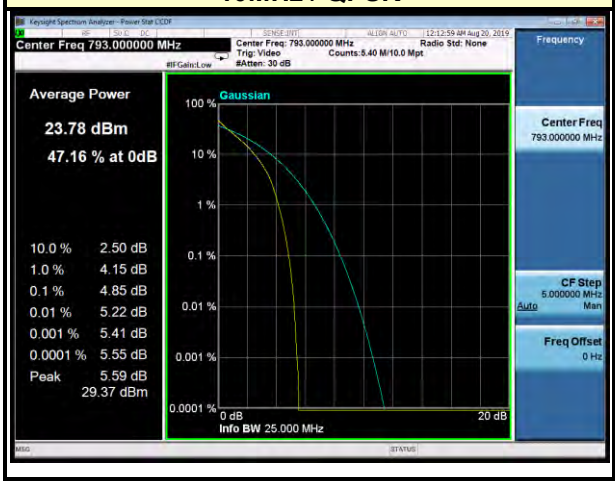
5MHz / QPSK



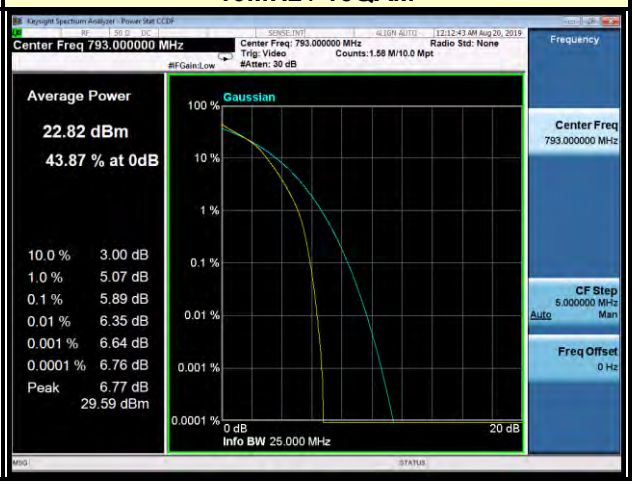
5MHz / 16QAM



10MHz / QPSK



10MHz / 16QAM

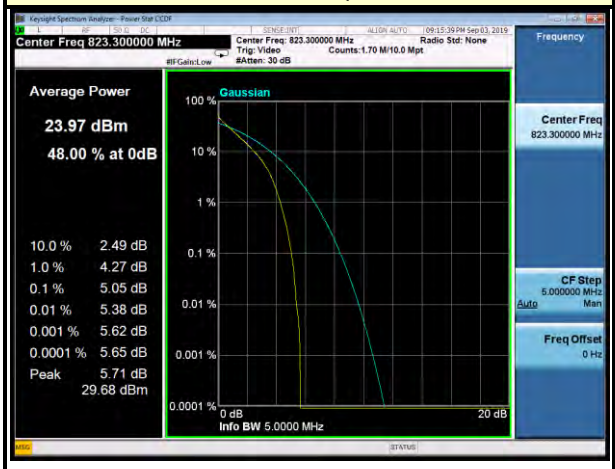


LTE BAND 26

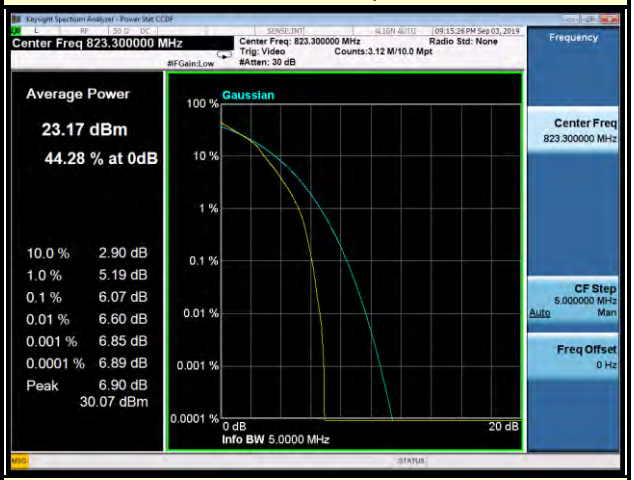
CHANNEL BANDWIDTH: 1.4MHz				CHANNEL BANDWIDTH: 3MHz			
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM			QPSK	16QAM
26697	814.7	4.64	5.65	26705	815.5	4.55	5.72
26740	819	4.43	5.42	26740	819	3.93	5.01
26783	823.3	5.05	6.07	26775	822.5	4.74	5.98

SPECTRUM PLOT OF WORST VALUE

1.4MHz / QPSK

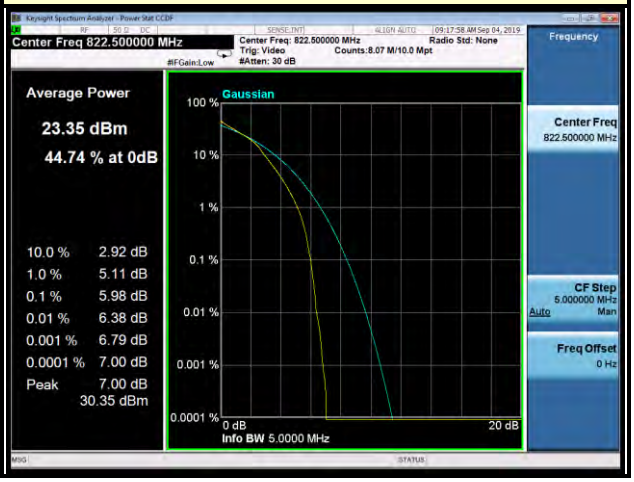


1.4MHz / 16QAM



3MHz / QPSK

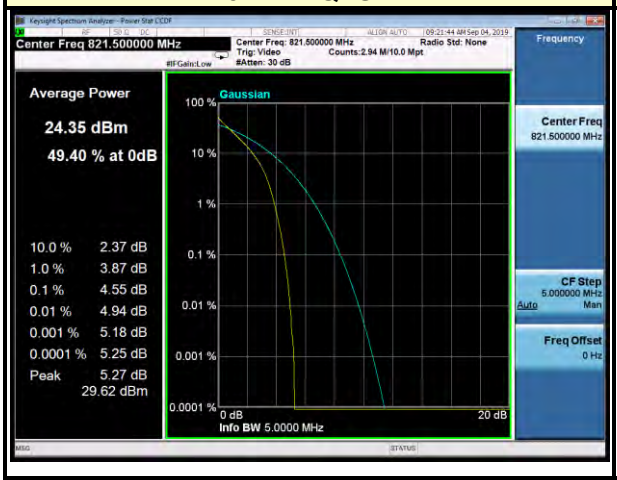
3MHz / 16QAM



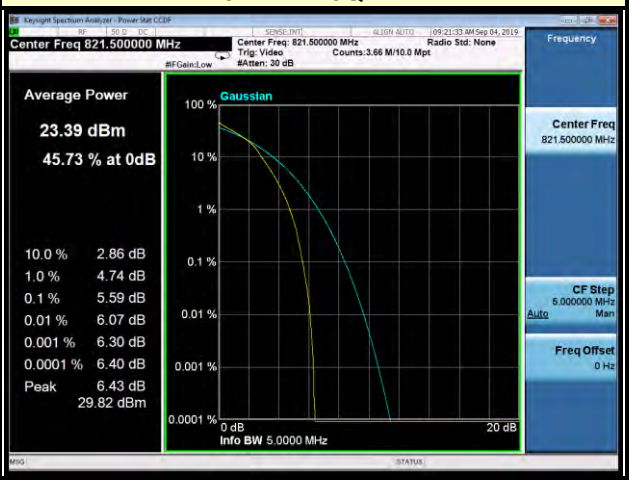
CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM			QPSK	16QAM
26715	816.5	4.34	5.35	/	/	/	/
26740	819	4.30	5.33	26740	819	4.57	5.64
26765	821.5	4.55	5.59	/	/	/	/

SPECTRUM PLOT OF WORST VALUE

5MHz / QPSK

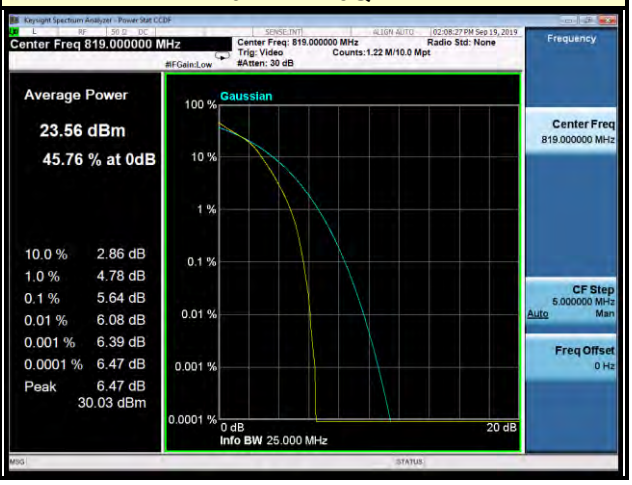


5MHz / 16QAM



10MHz / QPSK

10MHz / 16QAM

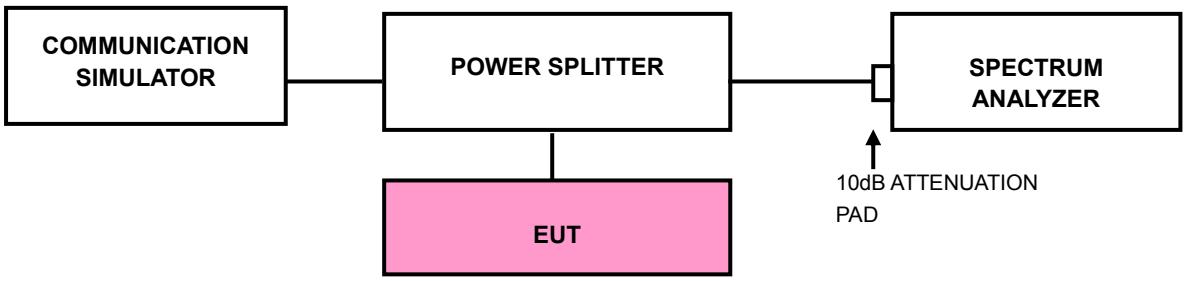


3.5 EMISSION MASK MEASUREMENT

3.5.1 LIMITS OF EMISSION MASK MEASUREMENT

According to FCC part 90.691 shall be tested the emission mask. For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50 + 10 Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

3.5.2 TEST SETUP



3.5.3 TEST PROCEDURES

a. The EUT was set up for the maximum peak power with LTE link data modulation. The power was measured with R&S Spectrum Analyzer. All measurements were done at 2 channels (low and high operational frequency range.).

b. The band edge measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

c. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 50kHz and VBW of the spectrum is 200kHz. (LTE bandwidth 5MHz)

d. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 100kHz and VBW of the spectrum is 300kHz. (LTE bandwidth 10MHz)

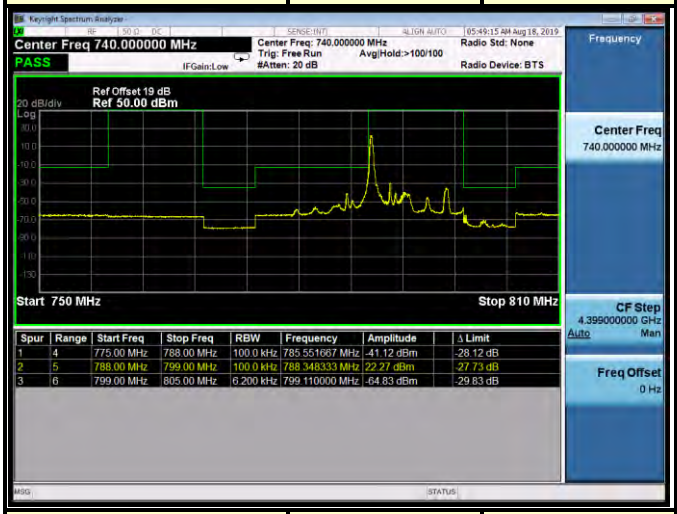
e. Record the max trace plot into the test report.

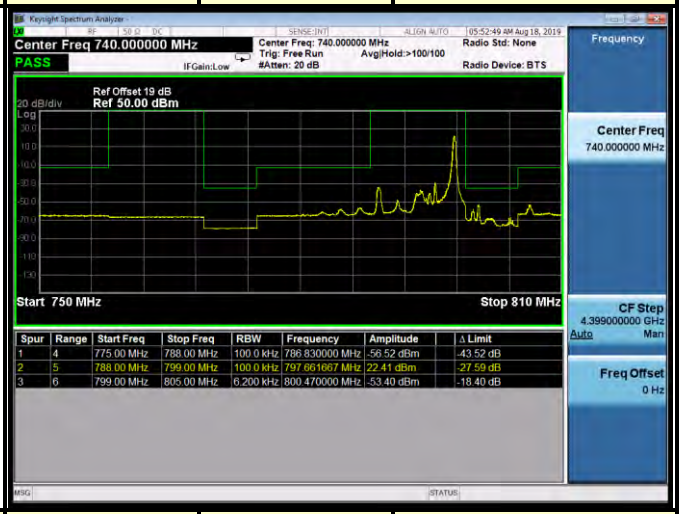
3.5.4 TEST RESULTS

LTE BAND 14

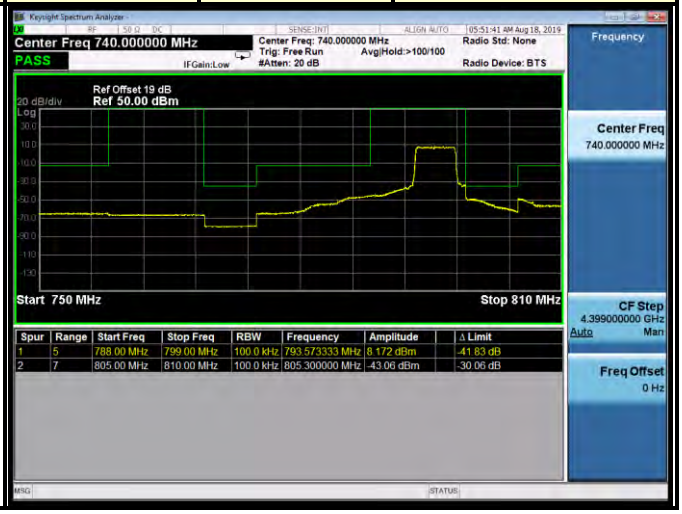
Channel Bandwidth: 5MHz QPSK

CHANNEL	23305	1 RB	CHANNEL	23355	1 RB





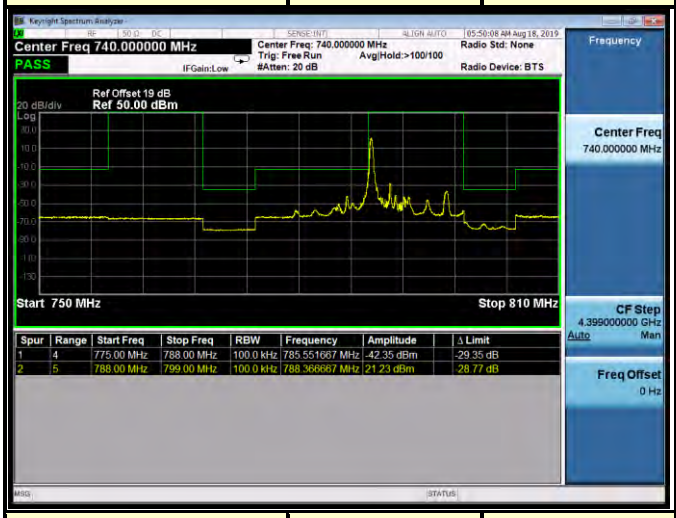
CHANNEL	23305	Full RB	CHANNEL	23355	Full RB

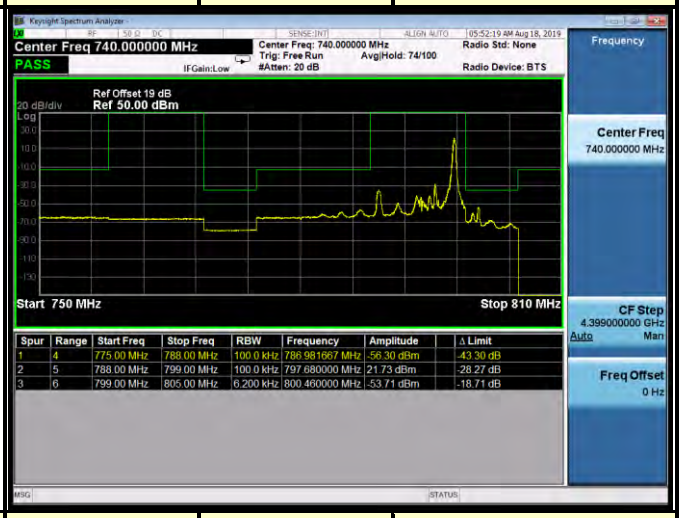


LTE BAND 14

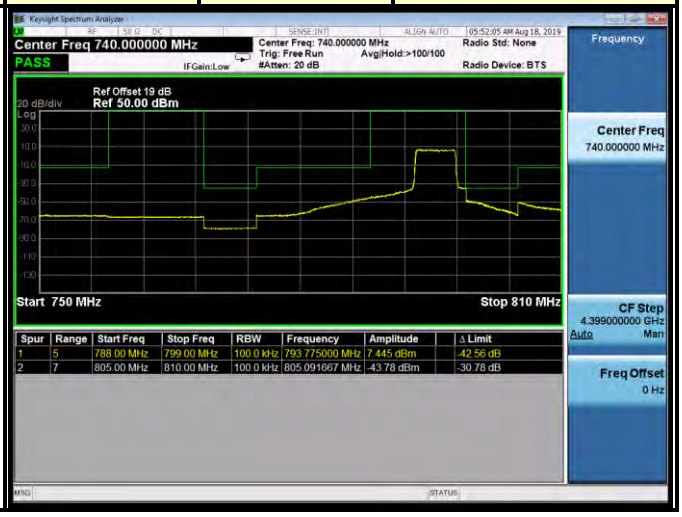
Channel Bandwidth: 5MHz 16QAM

CHANNEL	23305	1 RB	CHANNEL	23355	1 RB





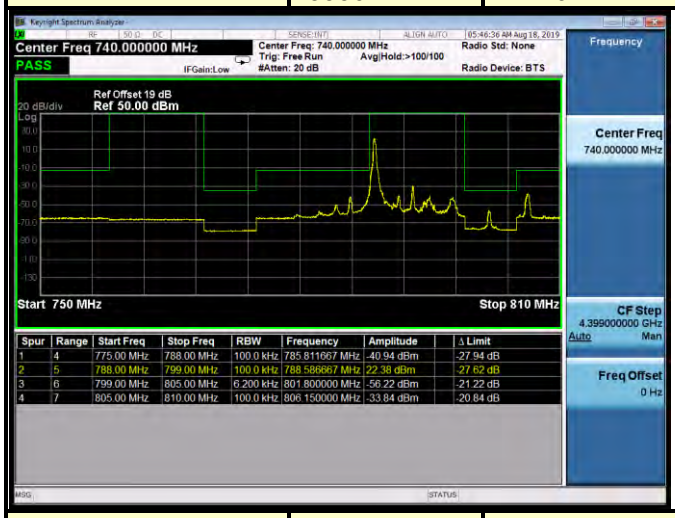
CHANNEL	23305	Full RB	CHANNEL	23355	Full RB

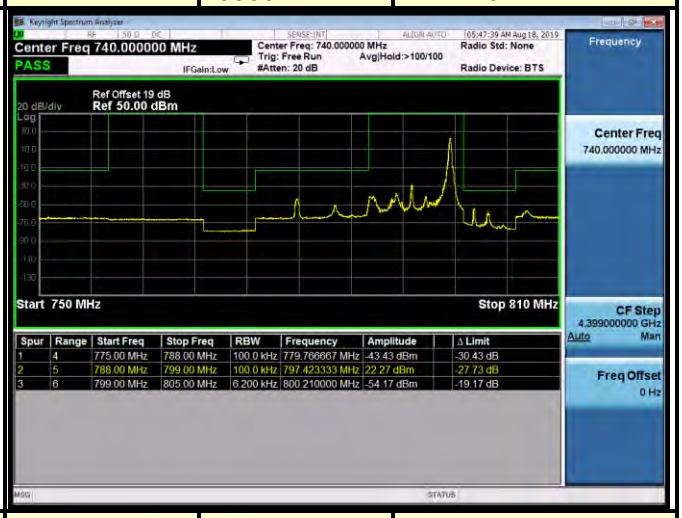


LTE BAND 14

Channel Bandwidth: 10MHz QPSK

CHANNEL	23330	1 RB 0	CHANNEL	23330	1 RB max

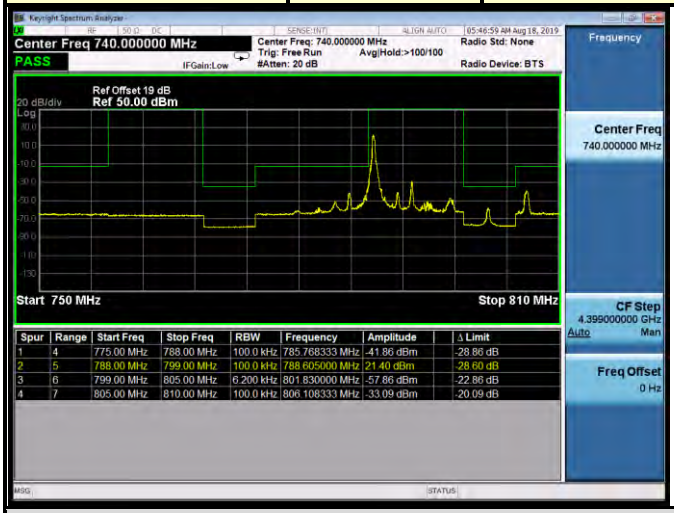


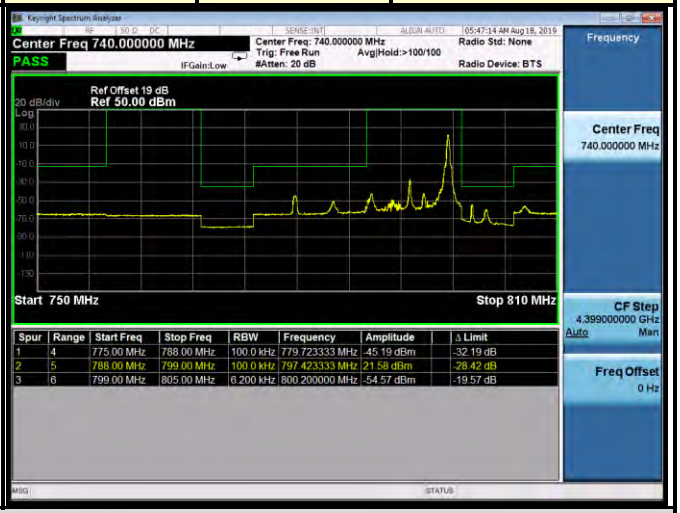


CHANNEL	23330	Full RB			

Channel Bandwidth: 10MHz 16QAM

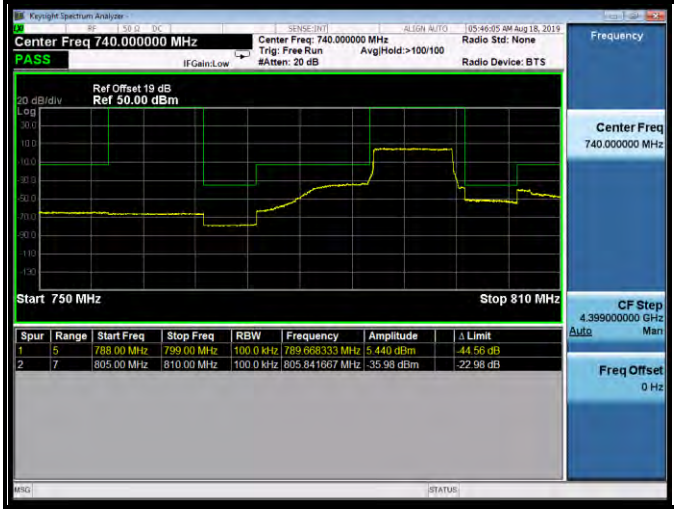
CHANNEL	23330	1 RB 0	CHANNEL	23330	1 RB max





Channel Bandwidth: 10MHz 16QAM

CHANNEL	23330	Full RB			

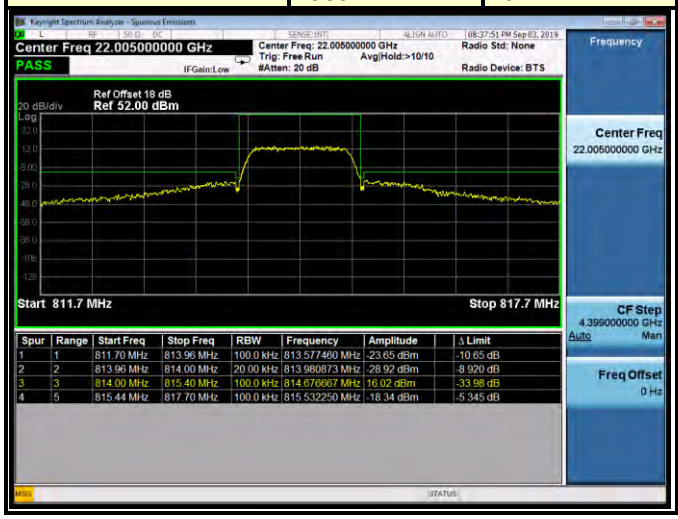


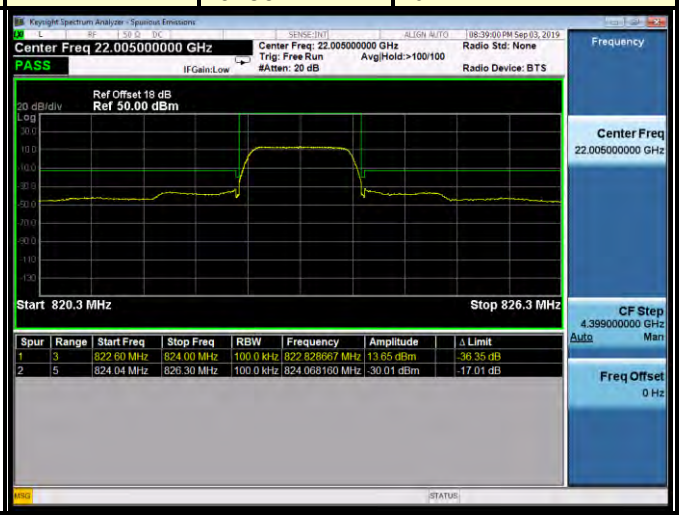
LTE BAND 26

Channel Bandwidth: 1.4MHz QPSK

CHANNEL	26697	1 RB	CHANNEL	26783	1 RB

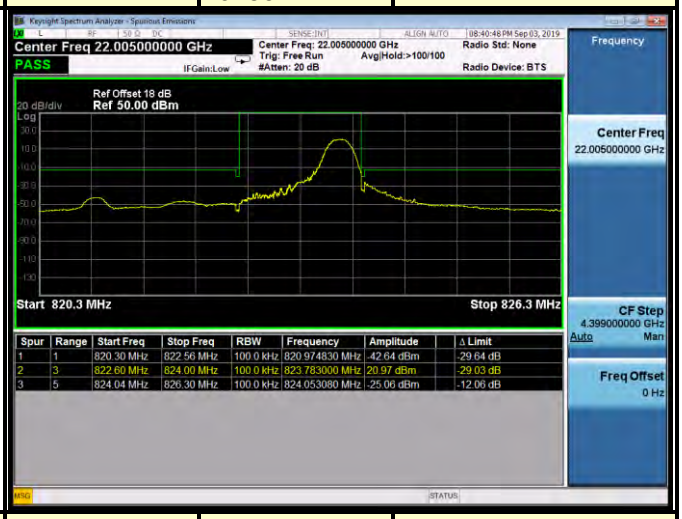
CHANNEL	26697	Full RB	CHANNEL	26783	Full RB





Channel Bandwidth: 1.4MHz 16QAM

CHANNEL	26697	1 RB	CHANNEL	26783	1 RB

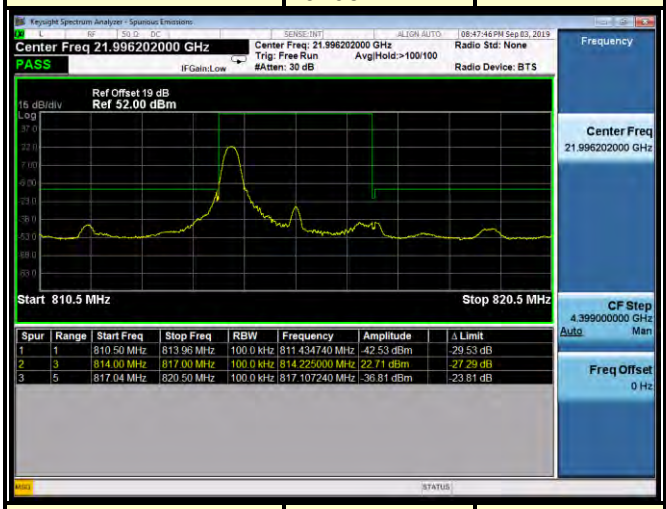


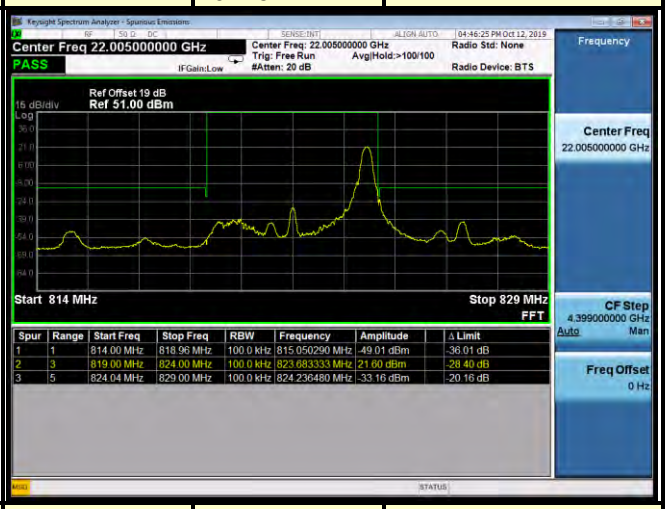
CHANNEL	26697	Full RB	CHANNEL	26783	Full RB

LTE BAND 26

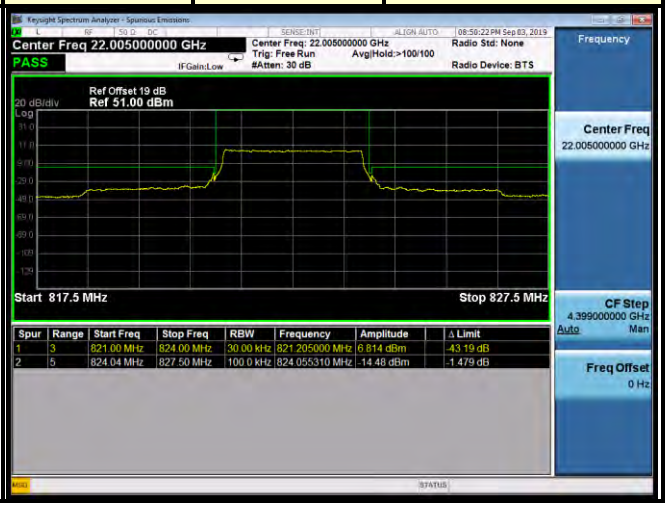
Channel Bandwidth: 3MHz QPSK

CHANNEL	26705	1 RB	CHANNEL	26775	1 RB



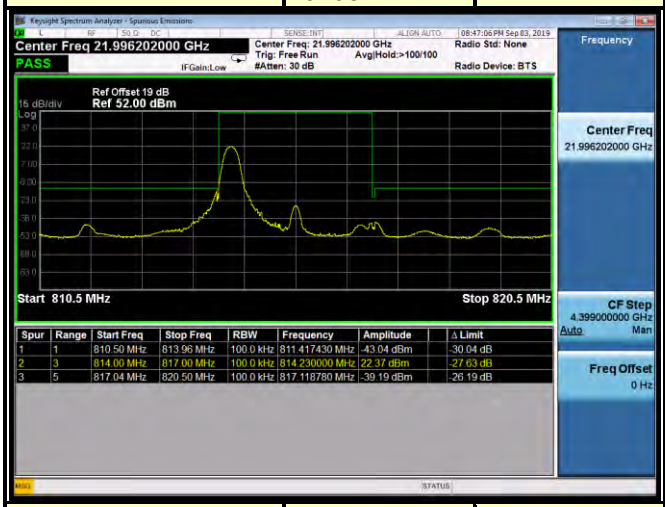


CHANNEL	26705	Full RB	CHANNEL	26775	Full RB

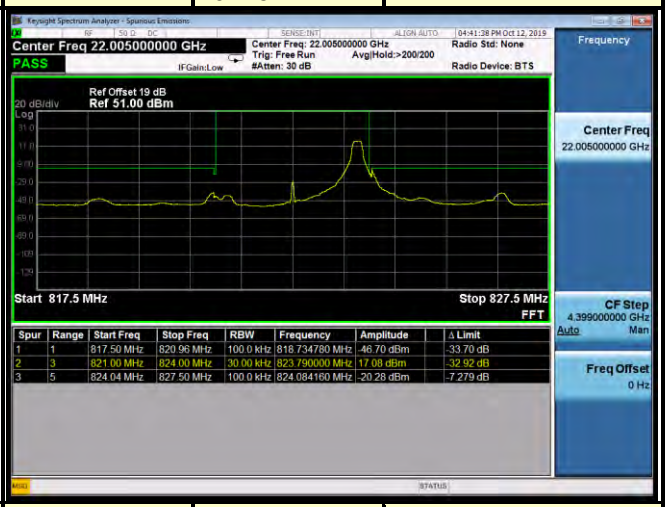


Channel Bandwidth: 3MHz 16QAM

CHANNEL	26705	1 RB	CHANNEL	26775	1 RB

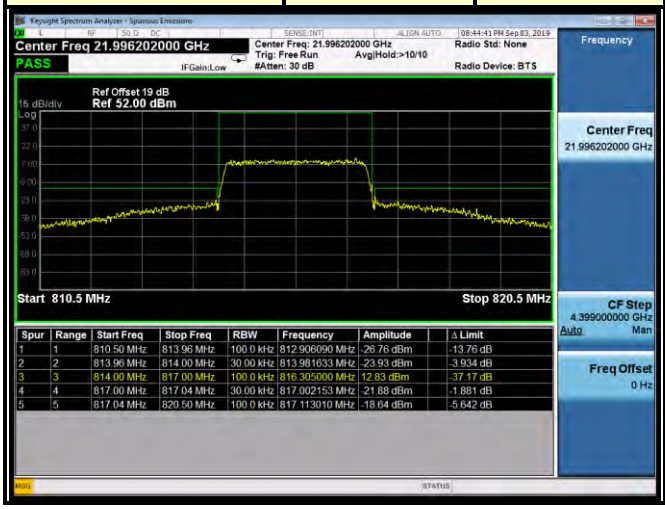


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	810.50 MHz	813.96 MHz	100.0 kHz	811.417430 MHz	-43.04 dBm	-30.04 dB
2	3	814.00 MHz	817.00 MHz	100.0 kHz	814.230000 MHz	22.37 dBm	-27.63 dB
3	5	817.04 MHz	820.50 MHz	100.0 kHz	817.118780 MHz	-39.19 dBm	-26.19 dB



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	817.50 MHz	820.96 MHz	100.0 kHz	818.734780 MHz	-46.70 dBm	-33.70 dB
2	3	821.00 MHz	824.00 MHz	30.00 kHz	823.790000 MHz	17.08 dBm	-32.92 dB
3	5	824.04 MHz	827.50 MHz	100.0 kHz	824.084160 MHz	-20.28 dBm	-7.279 dB

CHANNEL	26705	Full RB	CHANNEL	26775	Full RB



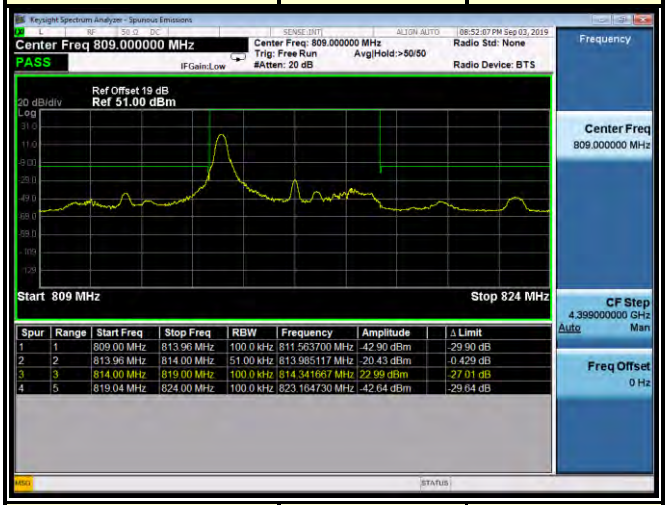
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	810.50 MHz	813.96 MHz	100.0 kHz	812.906090 MHz	-26.76 dBm	-13.76 dB
2	2	813.96 MHz	814.00 MHz	30.00 kHz	813.981633 MHz	-23.93 dBm	-3.934 dB
3	3	814.00 MHz	817.00 MHz	100.0 kHz	816.305000 MHz	12.83 dBm	-37.17 dB
4	4	817.00 MHz	817.04 MHz	30.00 kHz	817.002153 MHz	-21.88 dBm	-1.881 dB
5	5	817.04 MHz	820.50 MHz	100.0 kHz	817.113010 MHz	-18.64 dBm	-5.642 dB

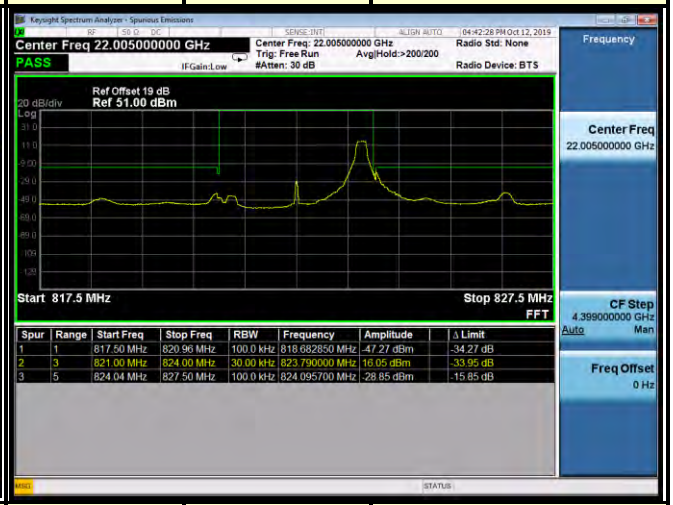
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	3	821.00 MHz	824.00 MHz	30.00 kHz	822.860000 MHz	5.018 dBm	-44.98 dB
2	5	824.04 MHz	827.50 MHz	100.0 kHz	824.159170 MHz	-30.34 dBm	-17.34 dB

LTE BAND 26

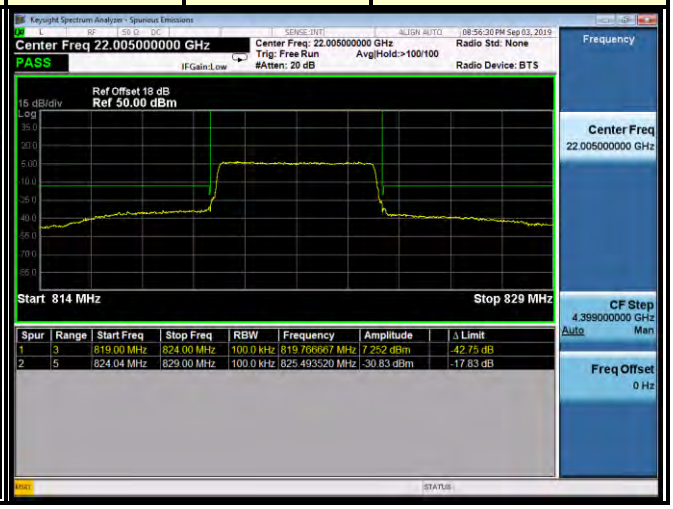
Channel Bandwidth: 5MHz QPSK

CHANNEL	26715	1 RB	CHANNEL	26765	1 RB



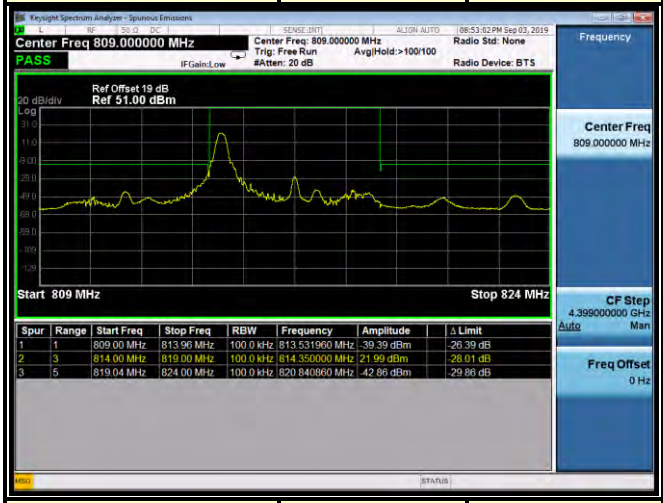


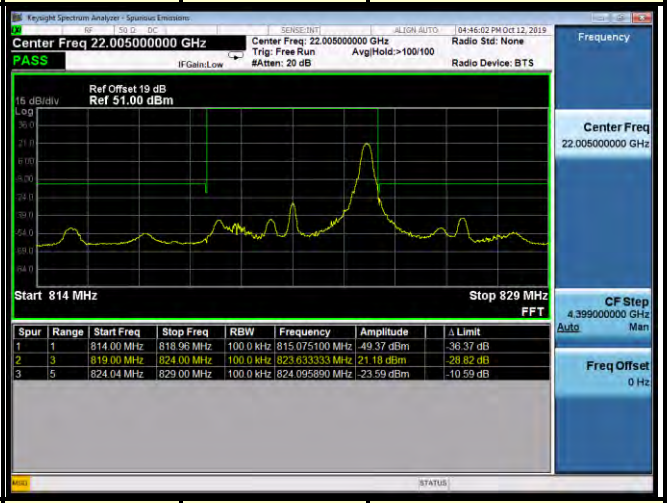
CHANNEL	26715	Full RB	CHANNEL	26765	Full RB



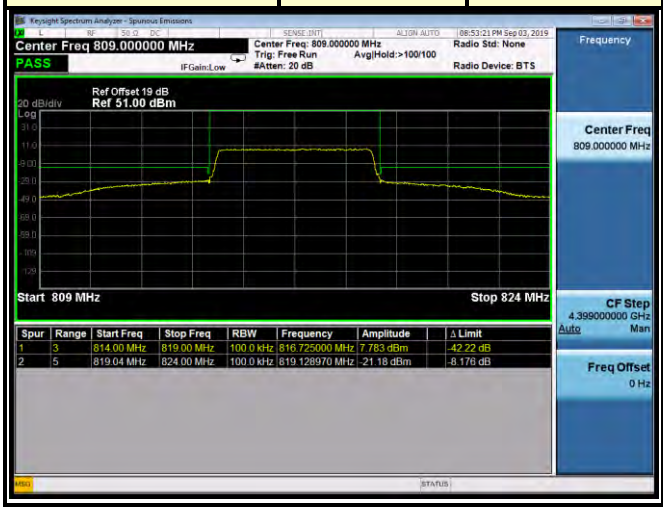
Channel Bandwidth: 5MHz 16QAM

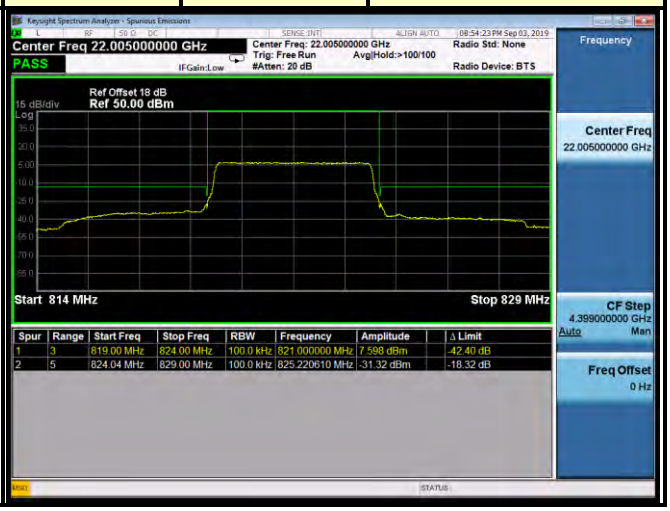
CHANNEL	26715	1 RB	CHANNEL	26765	1 RB





CHANNEL	26715	Full RB	CHANNEL	26765	Full RB

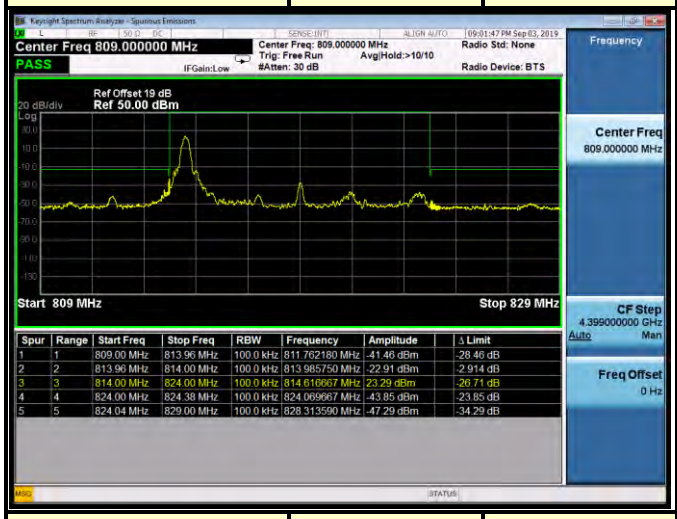




LTE BAND 26

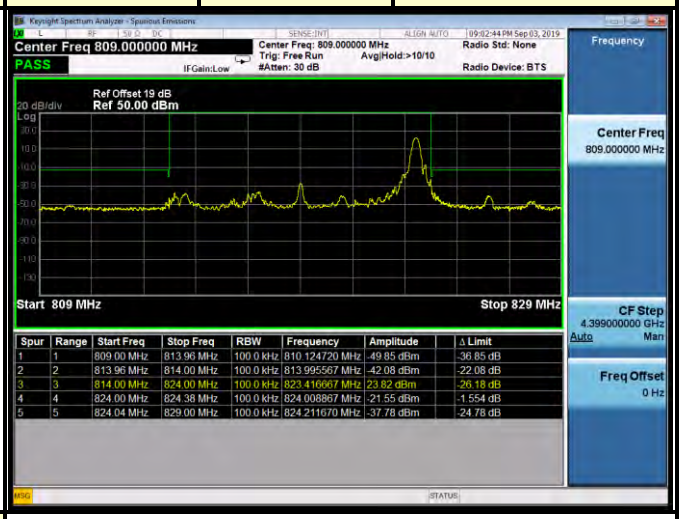
Channel Bandwidth: 10MHz QPSK

CHANNEL	26740	1 RB



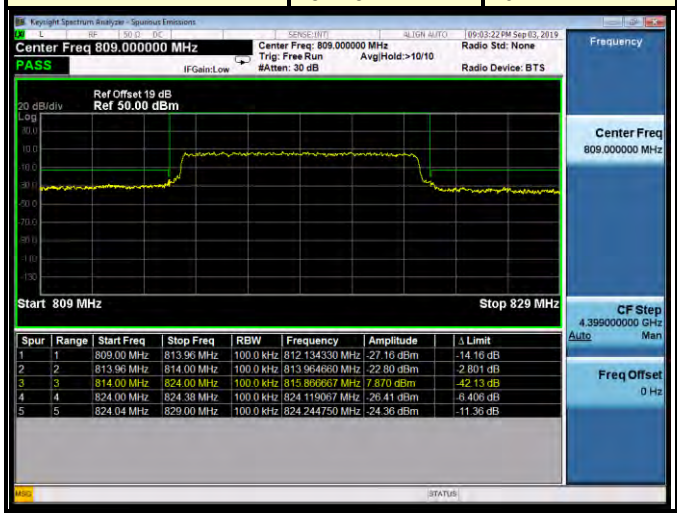
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	809.00 MHz	813.96 MHz	100.0 kHz	811.762180 MHz	-41.46 dBm	-28.46 dB
2	2	813.96 MHz	814.00 MHz	100.0 kHz	813.985750 MHz	-22.91 dBm	-2.914 dB
3	3	814.00 MHz	824.00 MHz	100.0 kHz	814.616667 MHz	23.29 dBm	-26.71 dB
4	4	824.00 MHz	824.38 MHz	100.0 kHz	824.069667 MHz	-43.85 dBm	-23.85 dB
5	5	824.04 MHz	829.00 MHz	100.0 kHz	828.313590 MHz	-47.29 dBm	-34.29 dB

CHANNEL	26740	49 RB



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	809.00 MHz	813.96 MHz	100.0 kHz	810.124720 MHz	-49.85 dBm	-36.85 dB
2	2	813.96 MHz	814.00 MHz	100.0 kHz	813.995567 MHz	-42.08 dBm	-22.08 dB
3	3	814.00 MHz	824.00 MHz	100.0 kHz	823.416667 MHz	23.82 dBm	-26.18 dB
4	4	824.00 MHz	824.38 MHz	100.0 kHz	824.008867 MHz	-21.55 dBm	-1.554 dB
5	5	824.04 MHz	829.00 MHz	100.0 kHz	824.211670 MHz	-37.78 dBm	-24.78 dB

CHANNEL	26740	Full RB

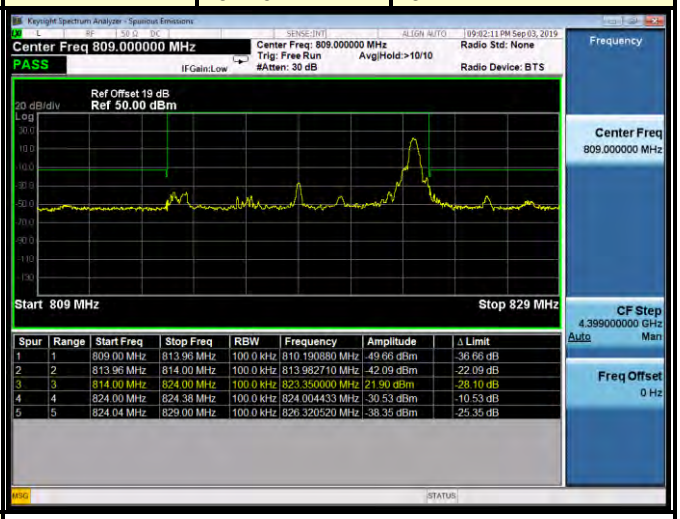


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	809.00 MHz	813.96 MHz	100.0 kHz	812.134330 MHz	-27.16 dBm	-14.16 dB
2	2	813.96 MHz	814.00 MHz	100.0 kHz	813.964660 MHz	-22.80 dBm	-2.801 dB
3	3	814.00 MHz	824.00 MHz	100.0 kHz	815.860667 MHz	7.870 dBm	-42.13 dB
4	4	824.00 MHz	824.38 MHz	100.0 kHz	824.119067 MHz	-26.41 dBm	-6.406 dB
5	5	824.04 MHz	829.00 MHz	100.0 kHz	824.244750 MHz	-24.36 dBm	-11.36 dB

Channel Bandwidth: 10MHz 16QAM

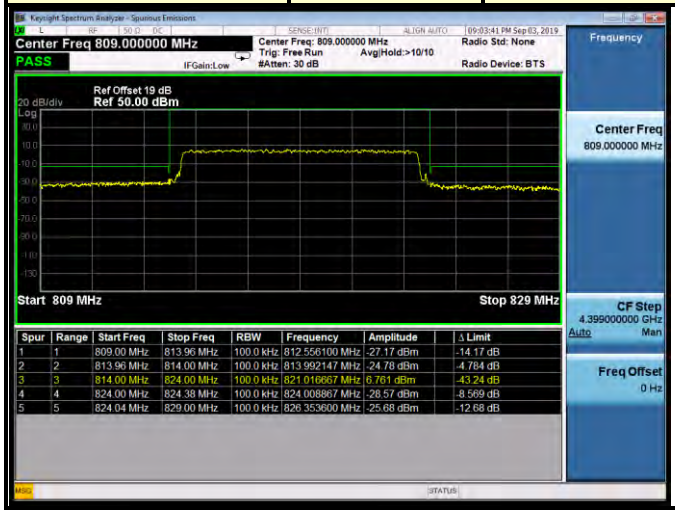
CHANNEL	26740	1 RB	CHANNEL	26740	49 RB

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	809.00 MHz	813.96 MHz	100.0 kHz	813.705630 MHz	-37.76 dBm	-24.76 dB
2	2	813.96 MHz	814.00 MHz	100.0 kHz	813.972323 MHz	-25.36 dBm	-5.355 dB
3	3	814.00 MHz	824.00 MHz	100.0 kHz	814.616667 MHz	21.60 dBm	-28.40 dB
4	4	824.00 MHz	824.38 MHz	100.0 kHz	824.057833 MHz	-48.11 dBm	-28.11 dB
5	5	824.04 MHz	829.00 MHz	100.0 kHz	826.965580 MHz	-45.32 dBm	-32.32 dB



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	809.00 MHz	813.96 MHz	100.0 kHz	810.190880 MHz	-49.66 dBm	-36.66 dB
2	2	813.96 MHz	814.00 MHz	100.0 kHz	813.982710 MHz	-42.09 dBm	-22.09 dB
3	3	814.00 MHz	824.00 MHz	100.0 kHz	823.350000 MHz	21.90 dBm	-28.10 dB
4	4	824.00 MHz	824.38 MHz	100.0 kHz	824.004433 MHz	-30.53 dBm	-10.53 dB
5	5	824.04 MHz	829.00 MHz	100.0 kHz	826.320520 MHz	-38.35 dBm	-25.35 dB

CHANNEL	26740	Full RB



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	809.00 MHz	813.96 MHz	100.0 kHz	812.556100 MHz	-27.17 dBm	-14.17 dB
2	2	813.96 MHz	814.00 MHz	100.0 kHz	813.992147 MHz	-24.78 dBm	-4.784 dB
3	3	814.00 MHz	824.00 MHz	100.0 kHz	821.016667 MHz	6.761 dBm	-43.24 dB
4	4	824.00 MHz	824.38 MHz	100.0 kHz	824.008867 MHz	-28.57 dBm	-8.569 dB
5	5	824.04 MHz	829.00 MHz	100.0 kHz	826.353600 MHz	-25.68 dBm	-12.68 dB

3.6 CONDUCTED SPURIOUS EMISSIONS

3.6.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

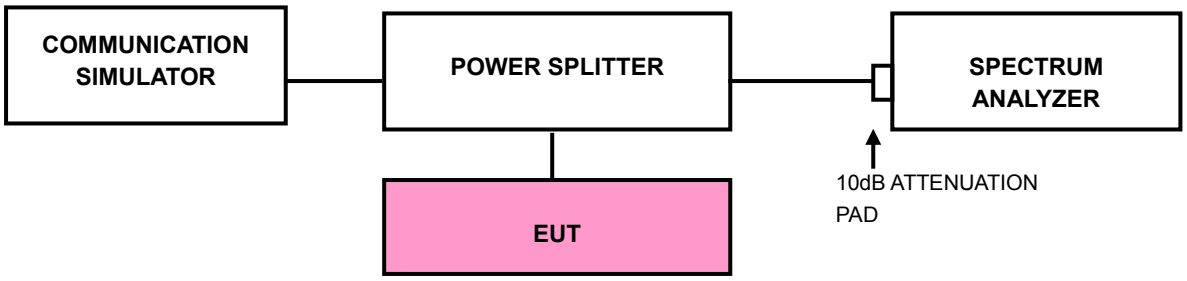
The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log10(P) dB. The limit of emission equal to –13dBm

3.6.2 TEST PROCEDURE

a. The EUT makes a phone call to the communication simulator. All measurements were done at middle operational frequency range.

b. Measuring frequency range is from 30 MHz to 9GHz. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz are used for conducted emission measurement.

3.6.3 TEST SETUP



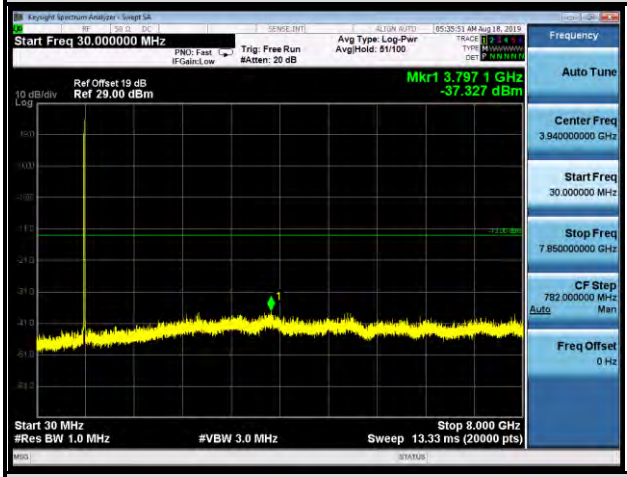
3.6.4 TEST RESULTS

LTE Band 14

5MHz / QPSK

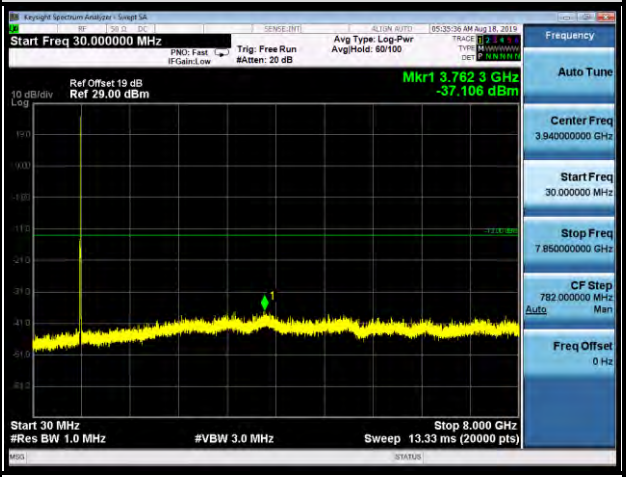
CHANNEL 23305

FREQUENCY RANGE : 30MHz~8GHz



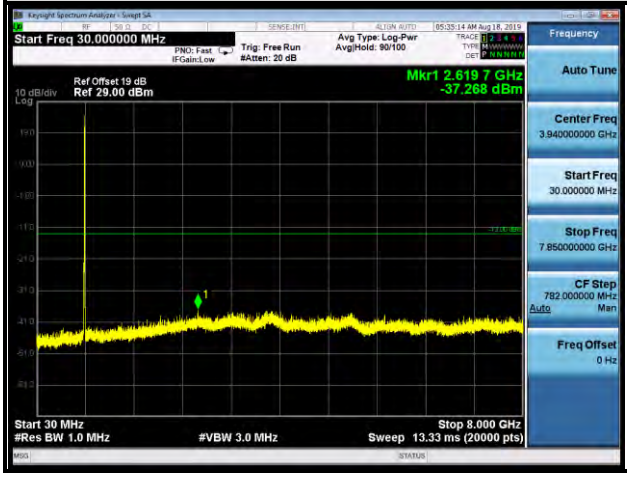
CHANNEL 23330

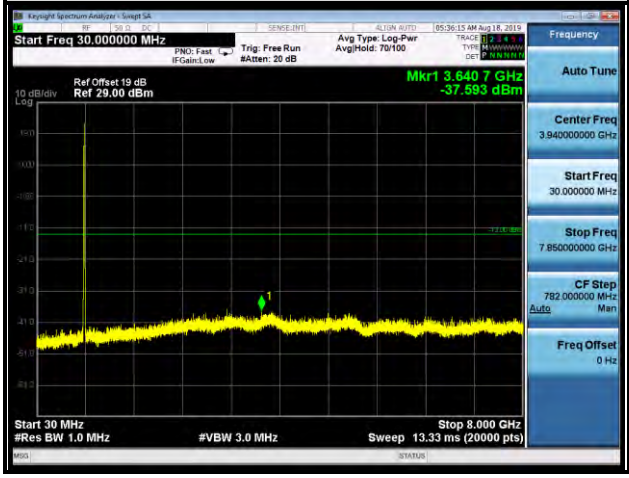
FREQUENCY RANGE : 30MHz~8GHz



CHANNEL 23355

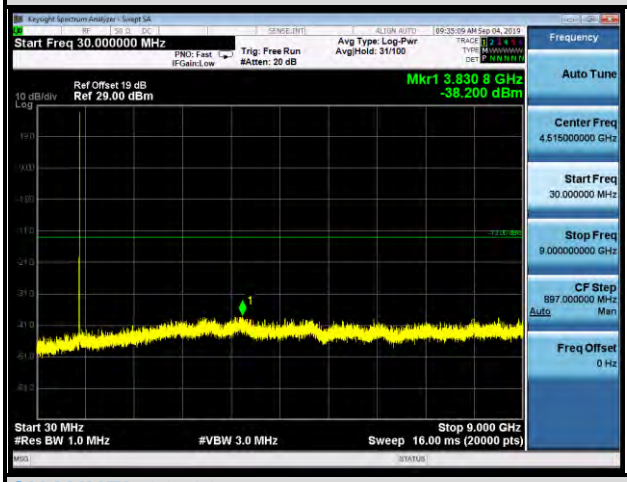
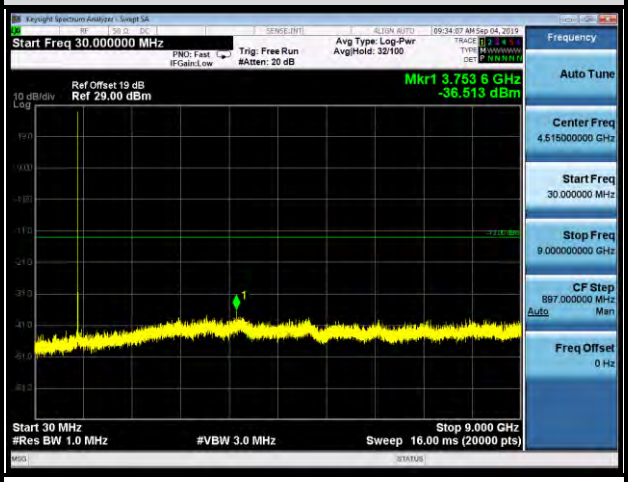
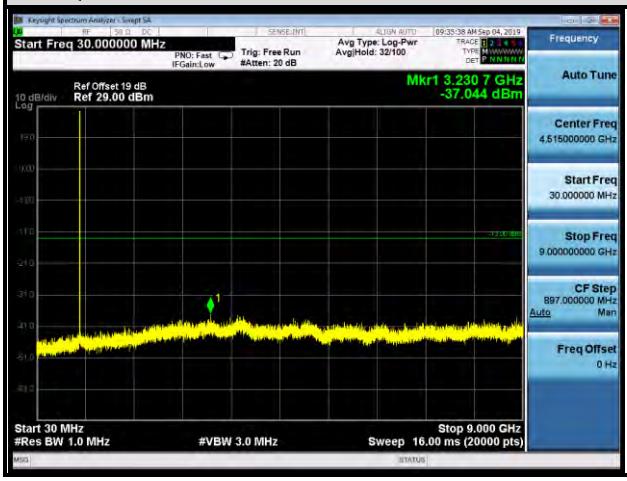
FREQUENCY RANGE : 30MHz~8GHz



10MHz / QPSK	
CHANNEL 23330	
FREQUENCY RANGE : 30MHz~8GHz	
	

LTE BAND 26

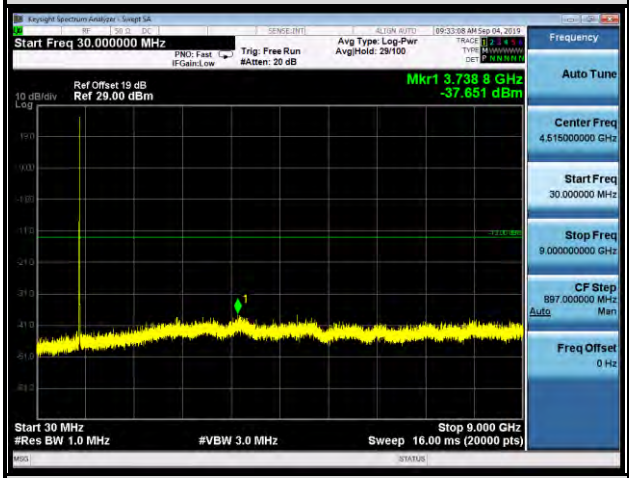
1.4MHz / QPSK

CHANNEL 26697	CHANNEL 26740
FREQUENCY RANGE : 30MHz~9GHz	FREQUENCY RANGE : 30MHz~9GHz
	
CHANNEL 26783	
FREQUENCY RANGE : 30MHz~9GHz	
	

3MHz / QPSK

CHANNEL 26705

FREQUENCY RANGE : 30MHz~9GHz

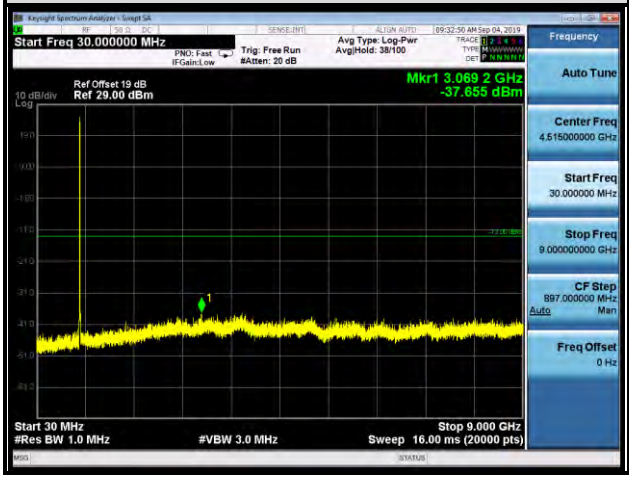


CHANNEL 26740

FREQUENCY RANGE : 30MHz~9GHz

CHANNEL 26775

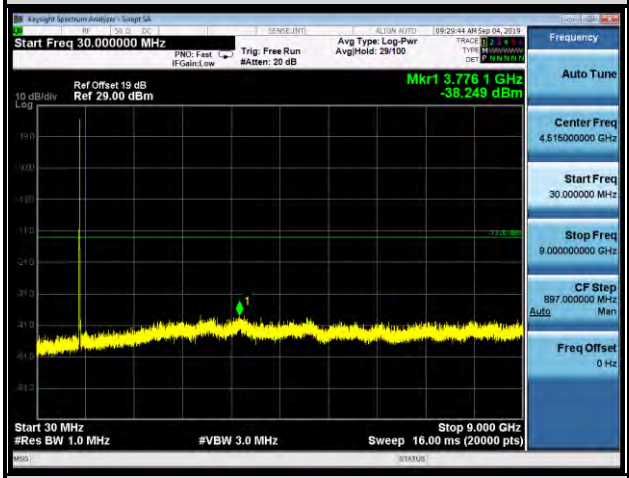
FREQUENCY RANGE : 30MHz~9GHz



5MHz / QPSK

CHANNEL 26715

FREQUENCY RANGE : 30MHz~9GHz

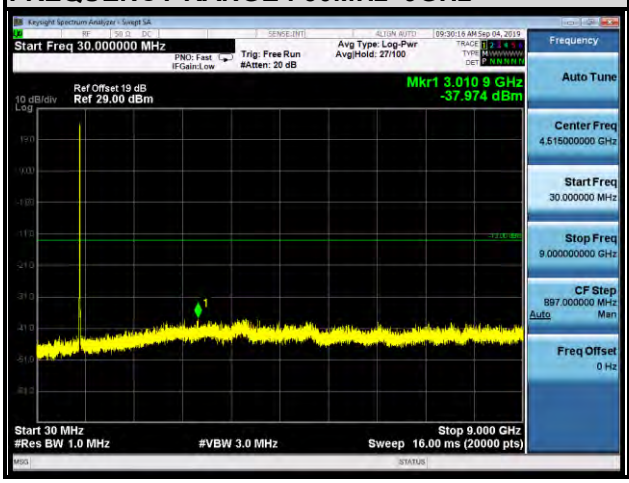


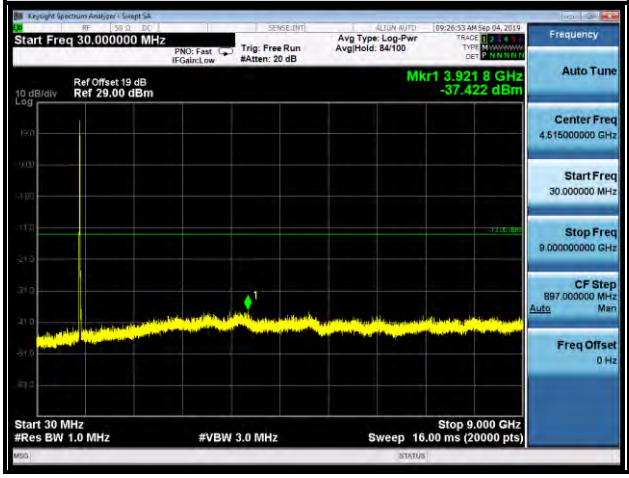
CHANNEL 26740

FREQUENCY RANGE : 30MHz~9GHz

CHANNEL 26765

FREQUENCY RANGE : 30MHz~9GHz



10MHz / QPSK	
CHANNEL 26740	
FREQUENCY RANGE : 30MHz~9GHz	
	

3.7 RADIATED EMISSION MEASUREMENT

3.7.1 LIMITS OF RADIATED EMISSION MEASUREMENT

(1)The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log10(P) dB. The limit of emission equal to –13dBm

(2) For operations in the 763–775 MHz and 793–805 MHz bands, all emissions including harmonics in the band 1559– 1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

3.7.2 TEST PROCEDURES

a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value” of step a. Record the power level of S.G

c. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.

d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power - 2.15dBi.

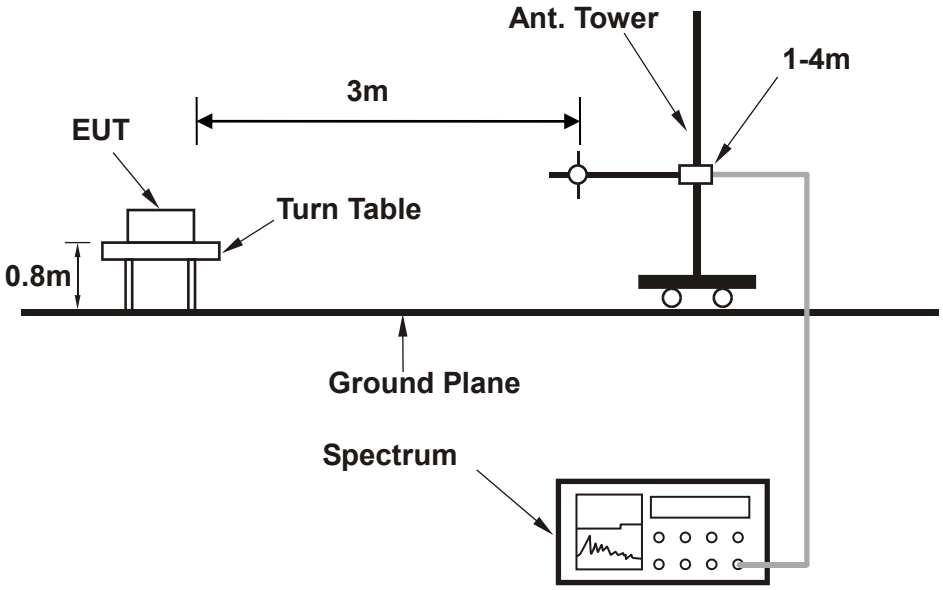
NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

3.7.3 DEVIATION FROM TEST STANDARD

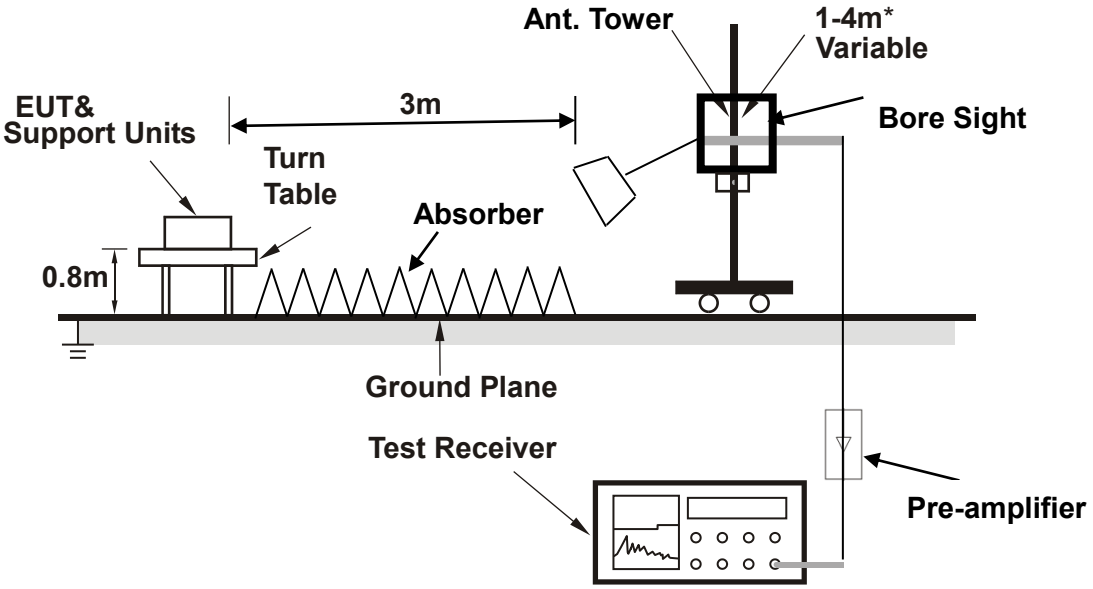
No deviation

3.7.4 TEST SETUP

< Frequency Range 30MHz~1GHz >



<Frequency Range above 1GHz>



Note: Above 1G is a directional antenna depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

3.7.5 TEST RESULTS

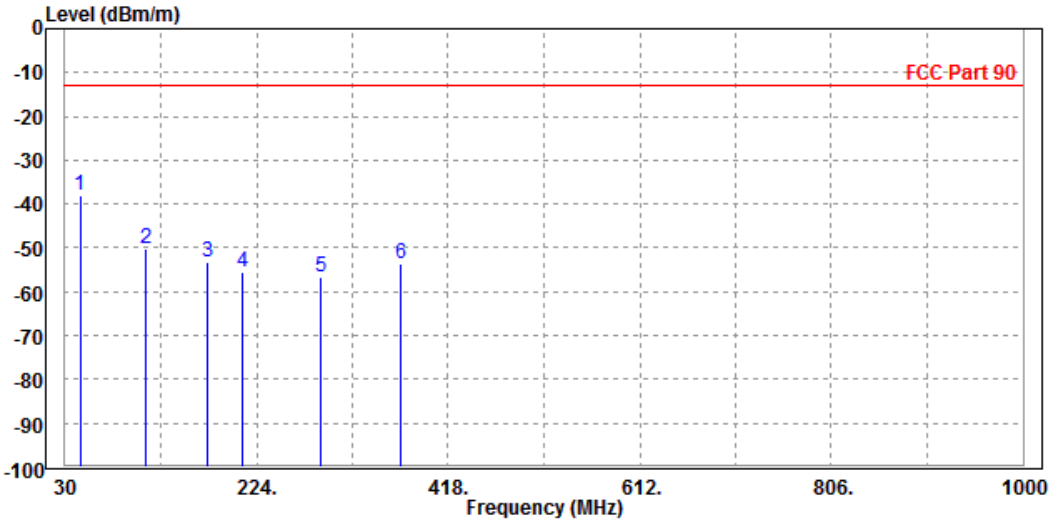
BELOW 1GHz WORST-CASE DATA

30 MHz – 1GHz data:

LTE BAND 26

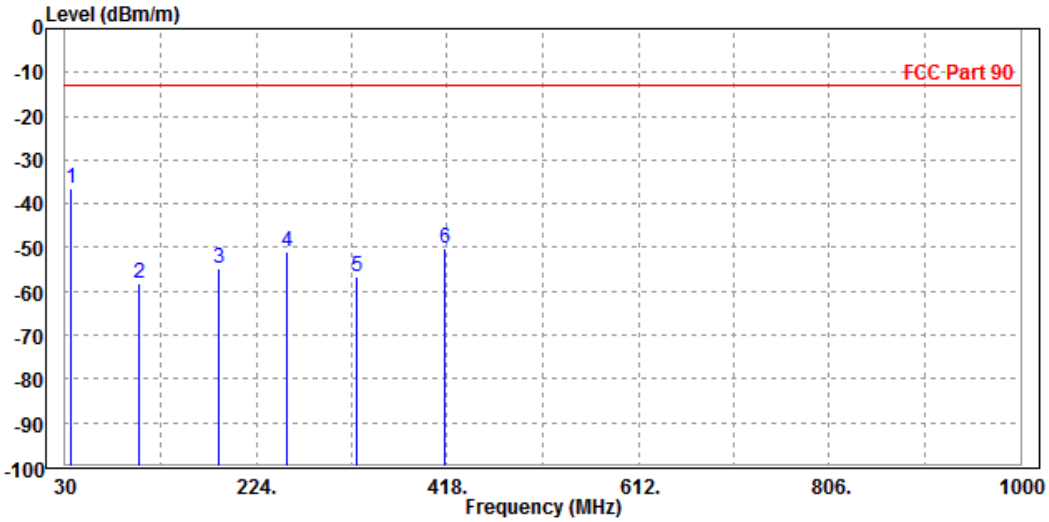
MODE	TX channel 26740	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	45.240	-38.19	-45.67	-13.00	-25.19	7.48	Peak	Horizontal
2	112.360	-50.28	-36.54	-13.00	-37.28	-13.74	Peak	Horizontal
3	174.530	-53.22	-35.26	-13.00	-40.22	-17.96	Peak	Horizontal
4	210.340	-55.69	-38.65	-13.00	-42.69	-17.04	Peak	Horizontal
5	289.510	-56.64	-42.31	-13.00	-43.64	-14.33	Peak	Horizontal
6	369.890	-53.62	-42.15	-13.00	-40.62	-11.47	Peak	Horizontal



MODE	TX channel 26740	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	36.520	-36.49	-35.18	-13.00	-23.49	-1.31	Peak	Vertical
2		105.450	-58.17	-46.78	-13.00	-45.17	-11.39	Peak	Vertical
3		185.690	-54.76	-42.31	-13.00	-41.76	-12.45	Peak	Vertical
4		254.630	-51.12	-39.62	-13.00	-38.12	-11.50	Peak	Vertical
5		325.480	-56.48	-45.28	-13.00	-43.48	-11.20	Peak	Vertical
6		415.230	-50.02	-39.65	-13.00	-37.02	-10.37	Peak	Vertical



ABOVE 1GHz

Note: For higher frequency, the emission is too low to be detected.

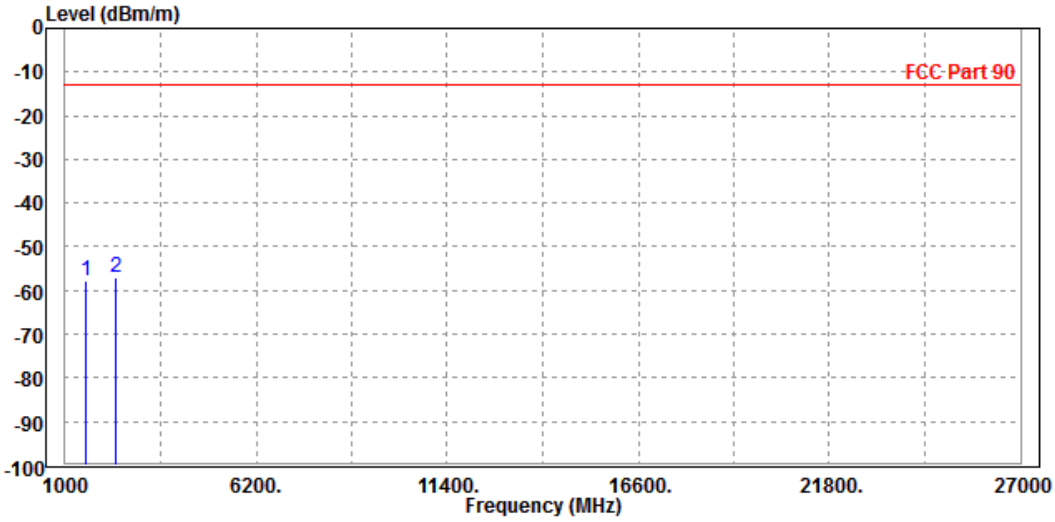
LTE Band 14

CHANNEL BANDWIDTH: 5MHz / QPSK

CH 23305

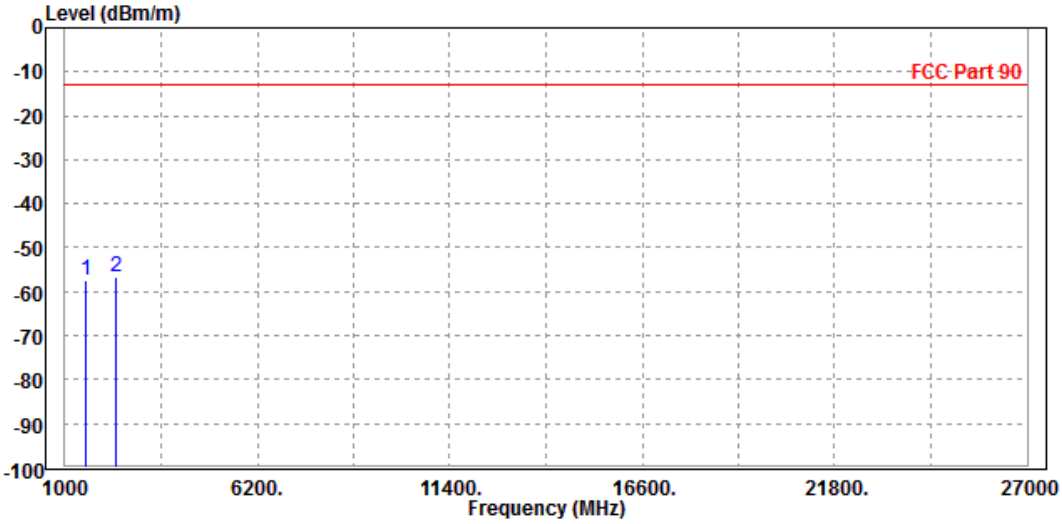
MODE	TX channel 23305	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1572.000	-57.92	-52.32	-13.00	-44.92	-5.60	Peak	Horizontal
2 PP	2371.500	-57.02	-55.28	-13.00	-44.02	-1.74	Peak	Horizontal



MODE	TX channel 23305	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

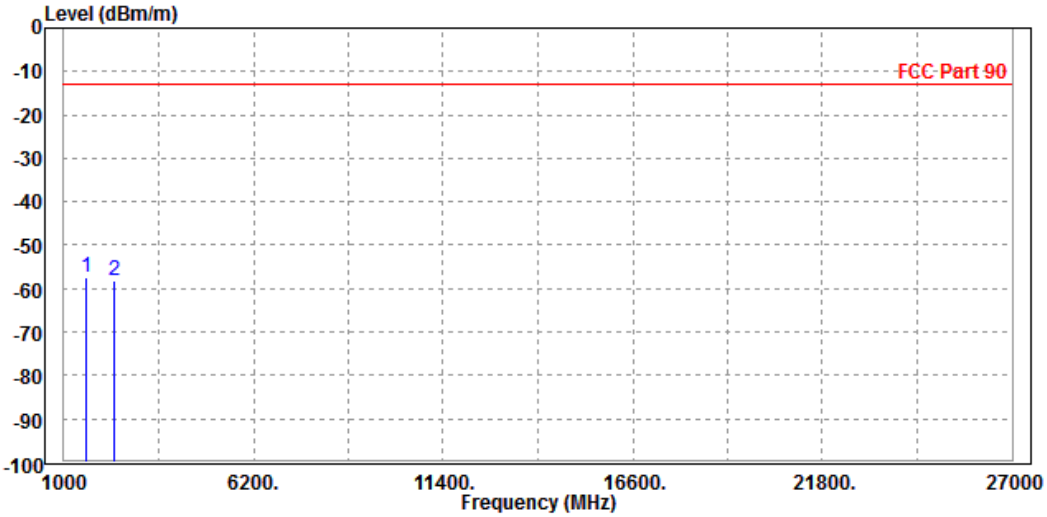
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1572.000	-57.49	-53.23	-13.00	-44.49	-4.26	Peak	Vertical
2	PP	2371.000	-56.66	-56.47	-13.00	-43.66	-0.19	Peak	Vertical



CH 23330

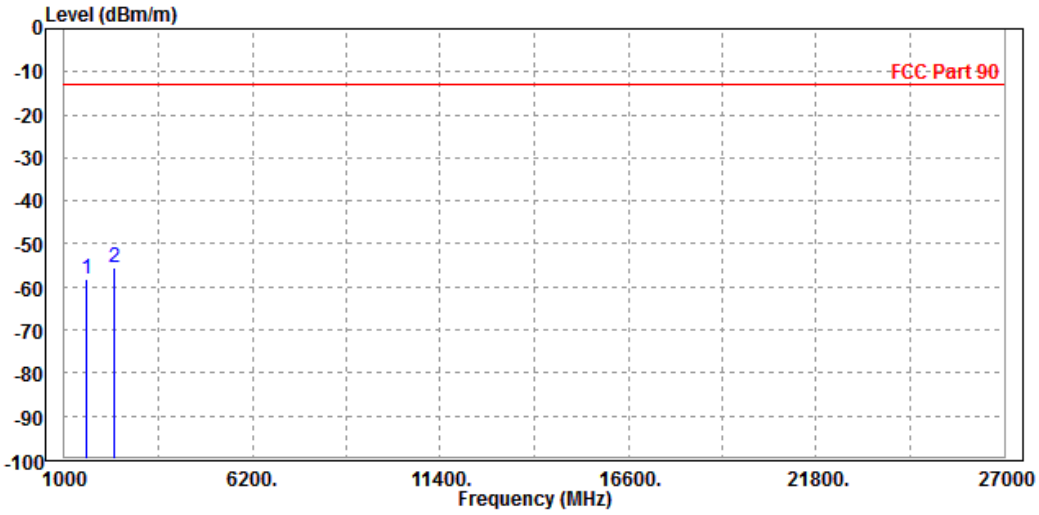
MODE	TX channel 23330	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1598.000	-57.54	-52.16	-13.00	-44.54	-5.38	Peak	Horizontal
2		2379.000	-58.12	-56.39	-13.00	-45.12	-1.73	Peak	Horizontal



MODE	TX channel 23330	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

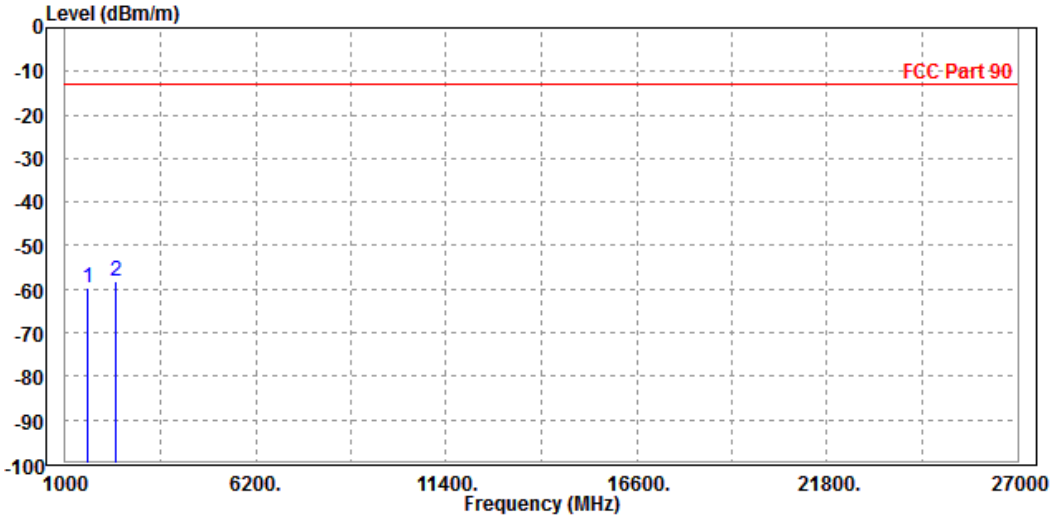
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1598.000	-58.34	-54.32	-13.00	-45.34	-4.02	Peak	Vertical
2	PP	2379.000	-55.33	-55.14	-13.00	-42.33	-0.19	Peak	Vertical



CH 23355

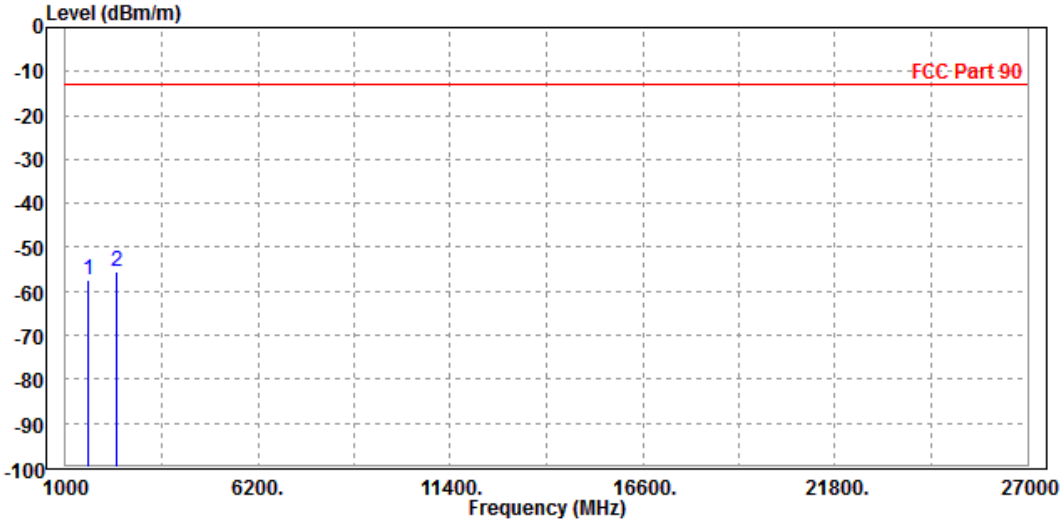
MODE	TX channel 23355	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1591.000	-59.62	-54.18	-13.00	-46.62	-5.44	Peak	Horizontal
2 PP	2386.500	-58.15	-56.42	-13.00	-45.15	-1.73	Peak	Horizontal



MODE	TX channel 23355	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

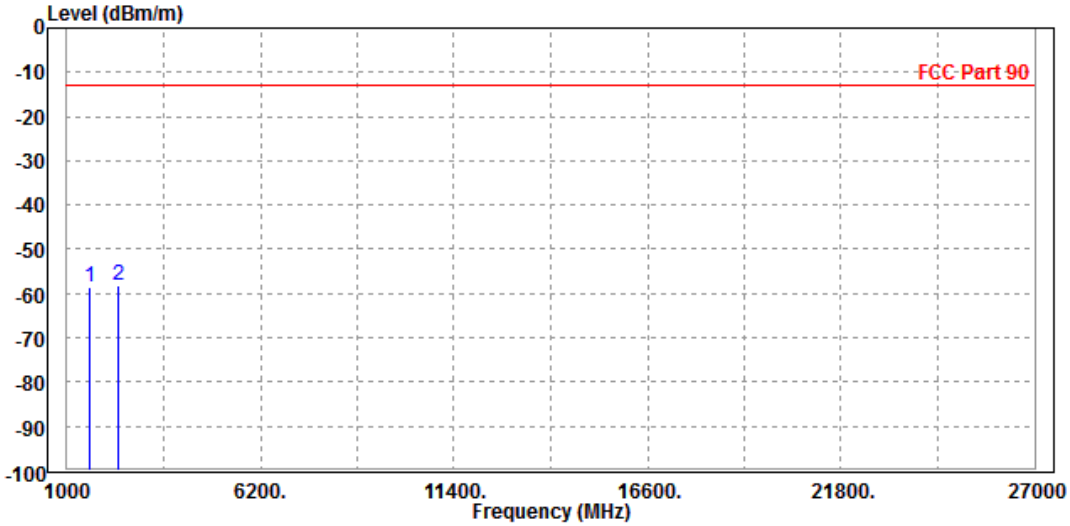
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1591.000	-57.31	-53.23	-13.00	-44.31	-4.08	Peak	Vertical
2 PP	2386.500	-55.65	-55.46	-13.00	-42.65	-0.19	Peak	Vertical



CHANNEL BANDWIDTH: 10MHz / QPSK

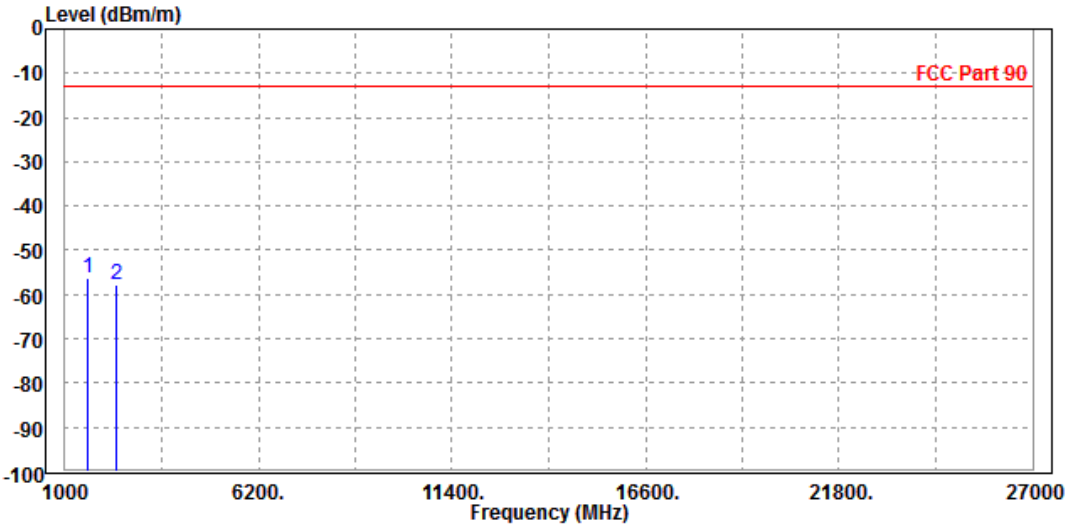
MODE	TX channel 23330	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1598.000	-58.59	-53.21	-13.00	-45.59	-5.38	Peak	Horizontal
2	PP	2379.000	-58.09	-56.36	-13.00	-45.09	-1.73	Peak	Horizontal



MODE	TX channel 23330	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1598.000	-56.33	-52.31	-13.00	-43.33	-4.02	Peak	Vertical
2		2379.000	-57.61	-57.42	-13.00	-44.61	-0.19	Peak	Vertical

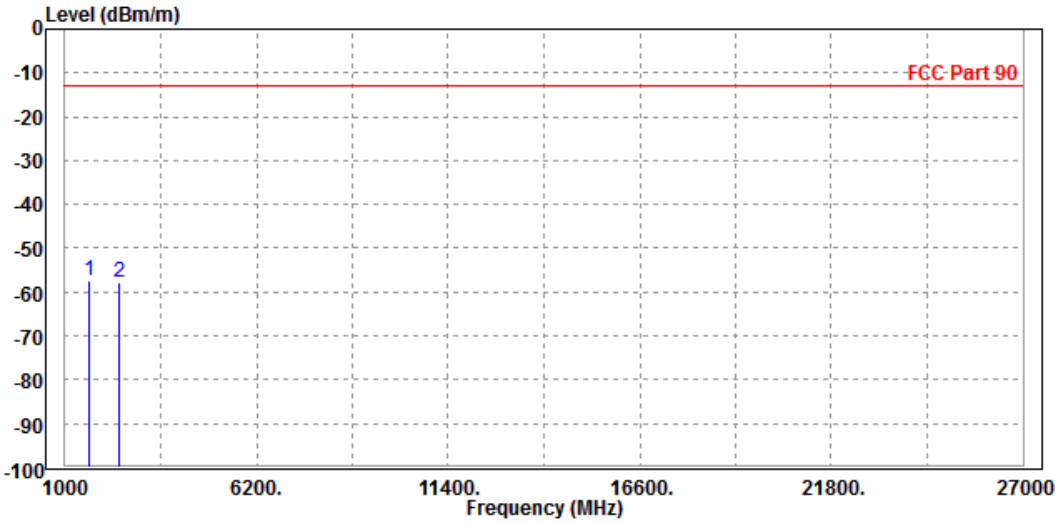


LTE BAND 26

CHANNEL BANDWIDTH: 1.4MHz / QPSK

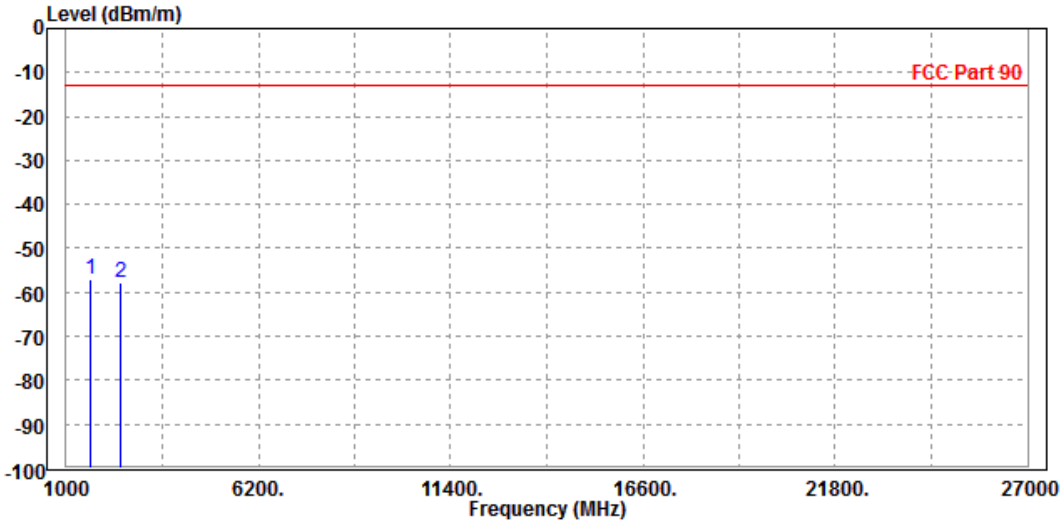
MODE	TX channel 26740	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1638.000	-57.39	-52.34	-13.00	-44.39	-5.05	Peak	Horizontal
2	2457.000	-57.79	-56.12	-13.00	-44.79	-1.67	Peak	Horizontal



MODE	TX channel 26740	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

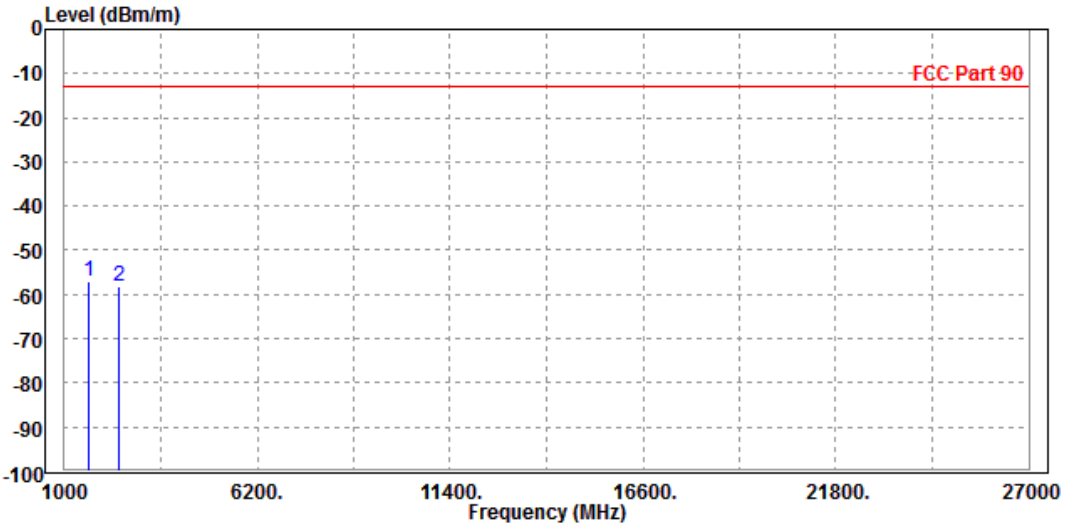
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1638.000	-56.99	-53.35	-13.00	-43.99	-3.64	Peak	Vertical
2		2457.000	-57.64	-57.46	-13.00	-44.64	-0.18	Peak	Vertical



CHANNEL BANDWIDTH: 3MHz / QPSK

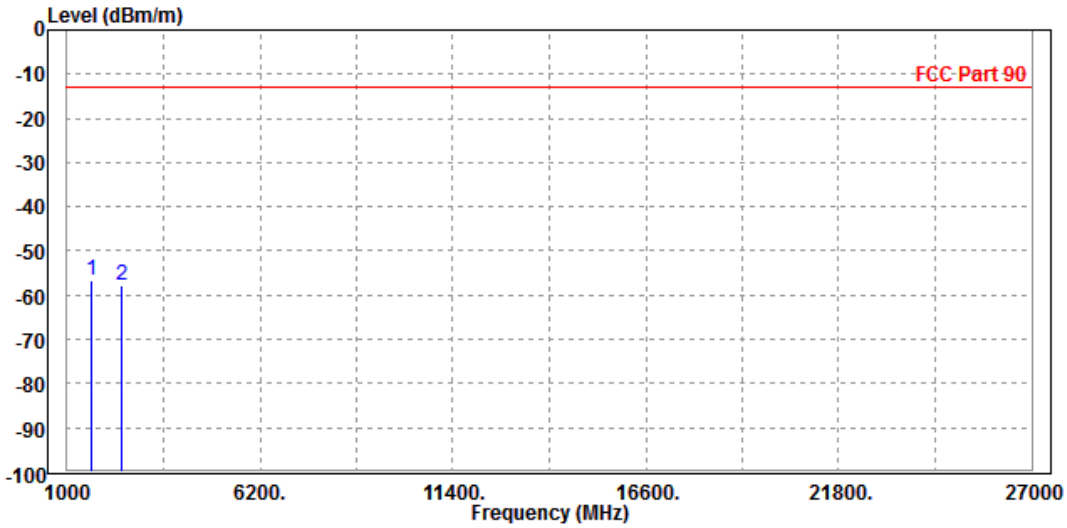
MODE	TX channel 26740	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1638.000	-57.18	-52.13	-13.00	-44.18	-5.05	Peak	Horizontal
2		2457.000	-58.09	-56.42	-13.00	-45.09	-1.67	Peak	Horizontal



MODE	TX channel 26740	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1638.000	-56.48	-52.84	-13.00	-43.48	-3.64	Peak	Vertical
2		2457.000	-57.81	-57.63	-13.00	-44.81	-0.18	Peak	Vertical

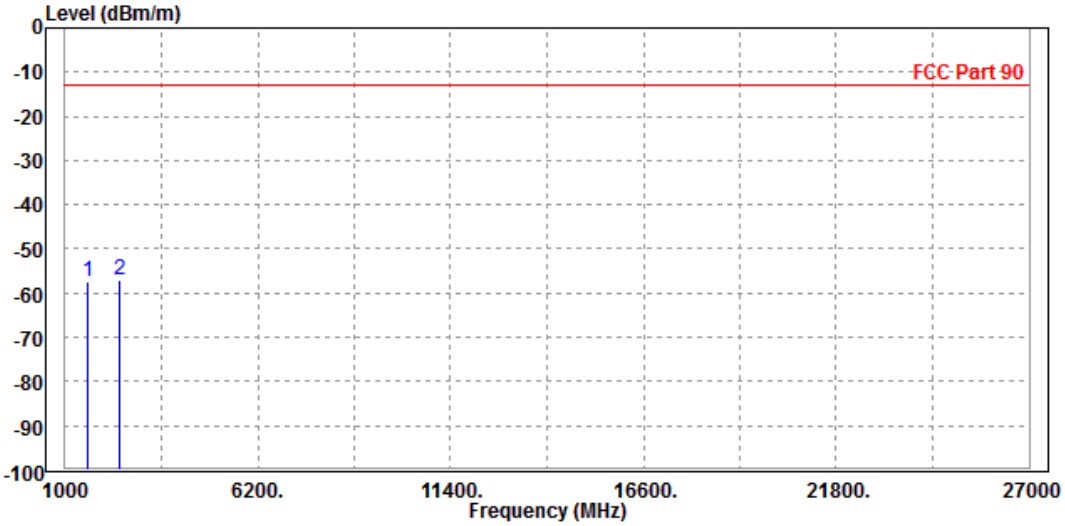


CHANNEL BANDWIDTH: 5MHz / QPSK

CH 26715

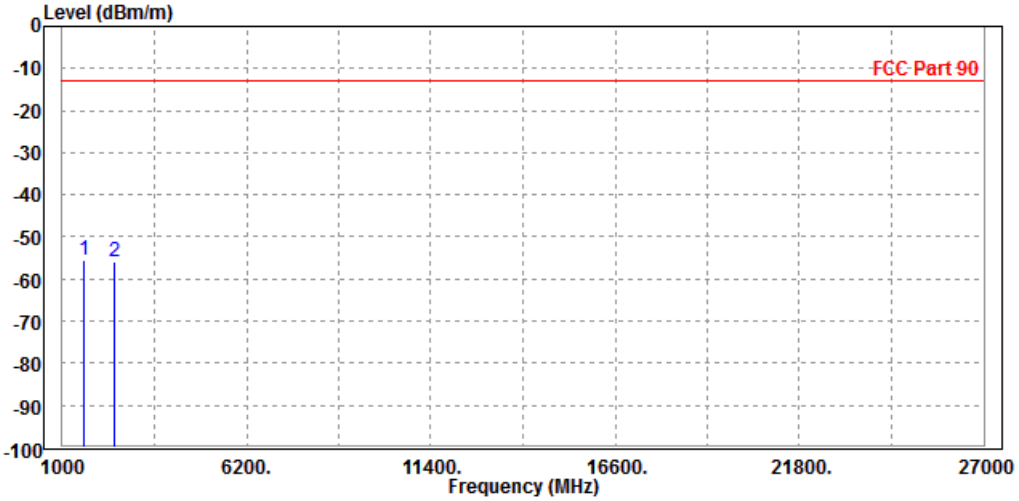
MODE	TX channel 26715	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1632.000	-57.41	-52.31	-13.00	-44.41	-5.10	Peak	Horizontal
2	PP	2449.000	-56.92	-55.24	-13.00	-43.92	-1.68	Peak	Horizontal



MODE	TX channel 26715	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

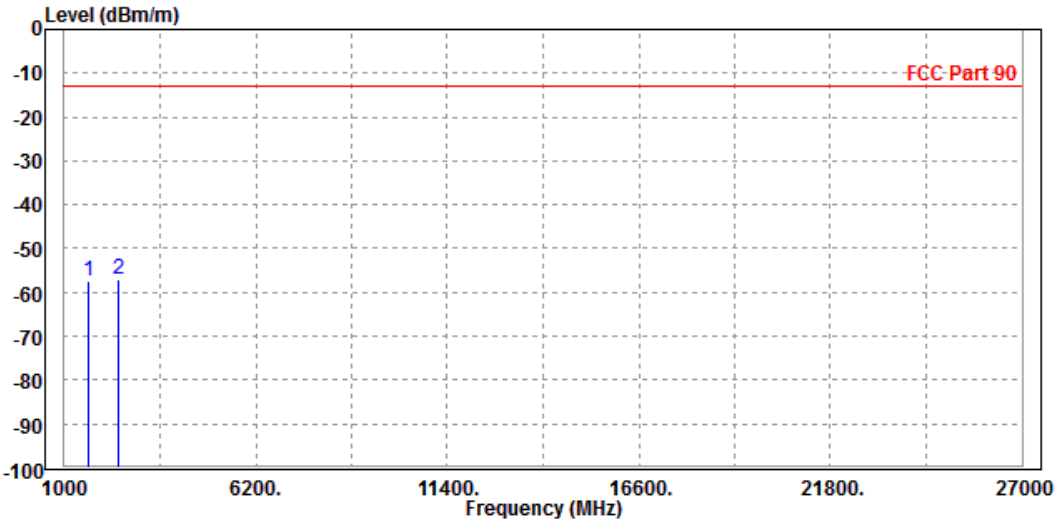
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1632.000	-55.45	-51.75	-13.00	-42.45	-3.70	Peak	Vertical
2		2449.000	-55.81	-55.63	-13.00	-42.81	-0.18	Peak	Vertical



CH 26740

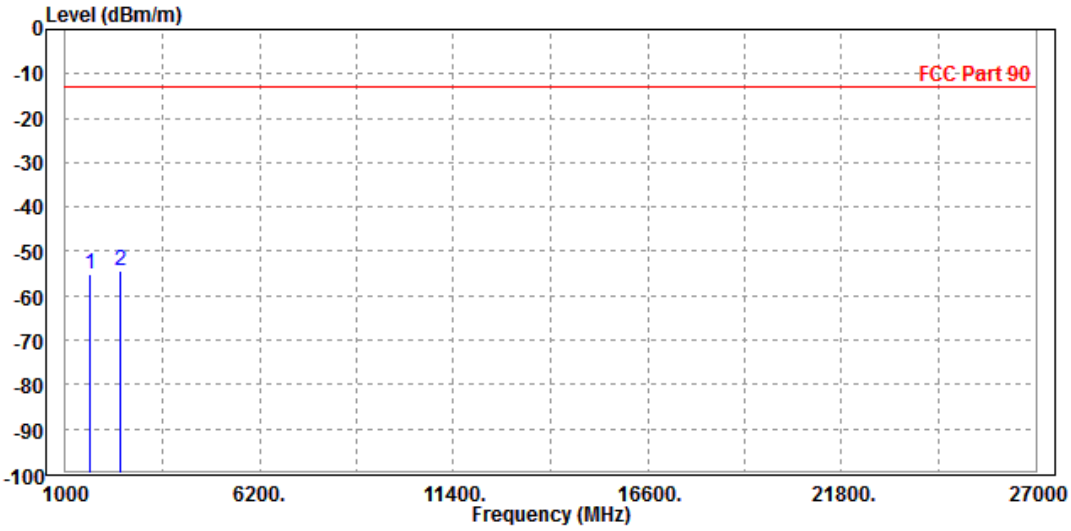
MODE	TX channel 26740	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1638.000	-57.49	-52.44	-13.00	-44.49	-5.05	Peak	Horizontal
2	PP	2457.000	-57.06	-55.39	-13.00	-44.06	-1.67	Peak	Horizontal



MODE	TX channel 26740	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

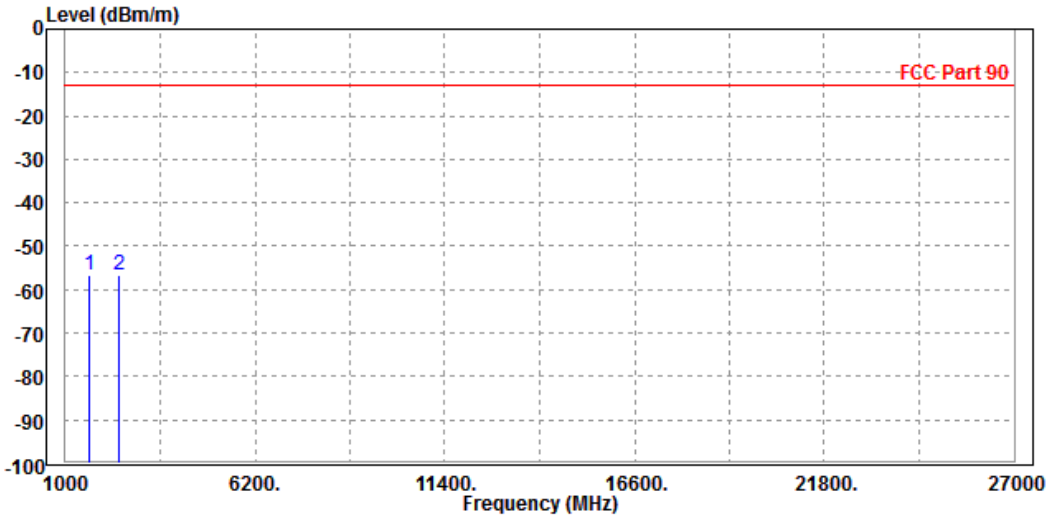
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1638.000	-55.01	-51.37	-13.00	-42.01	-3.64	Peak	Vertical
2 PP	2457.000	-54.36	-54.18	-13.00	-41.36	-0.18	Peak	Vertical



CH 26765

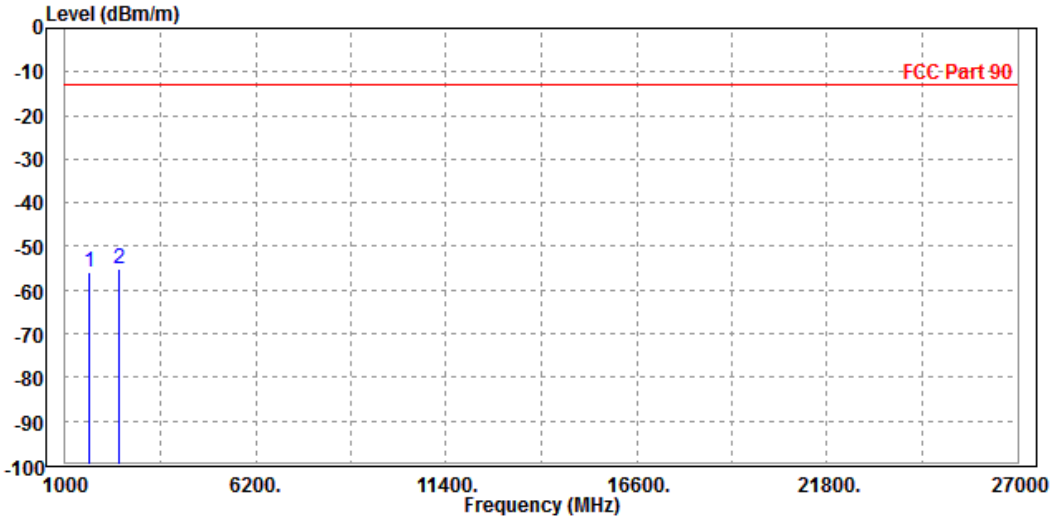
MODE	TX channel 26765	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1643.000	-56.50	-51.49	-13.00	-43.50	-5.01	Peak	Horizontal
2		2465.000	-56.50	-54.84	-13.00	-43.50	-1.66	Peak	Horizontal



MODE	TX channel 26765	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

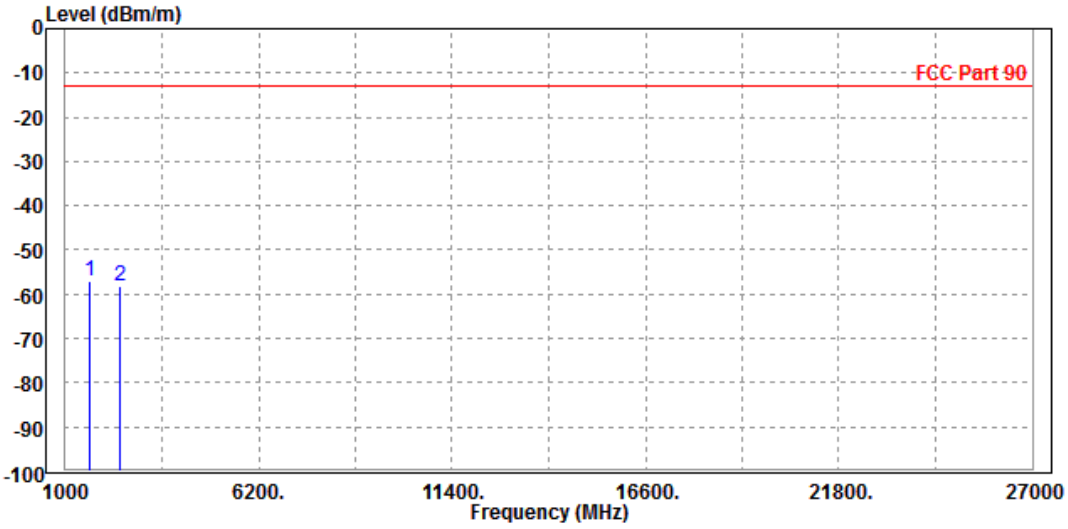
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1643.000	-55.94	-52.34	-13.00	-42.94	-3.60	Peak	Vertical
2 PP	2465.000	-55.30	-55.13	-13.00	-42.30	-0.17	Peak	Vertical



CHANNEL BANDWIDTH: 10MHz / QPSK

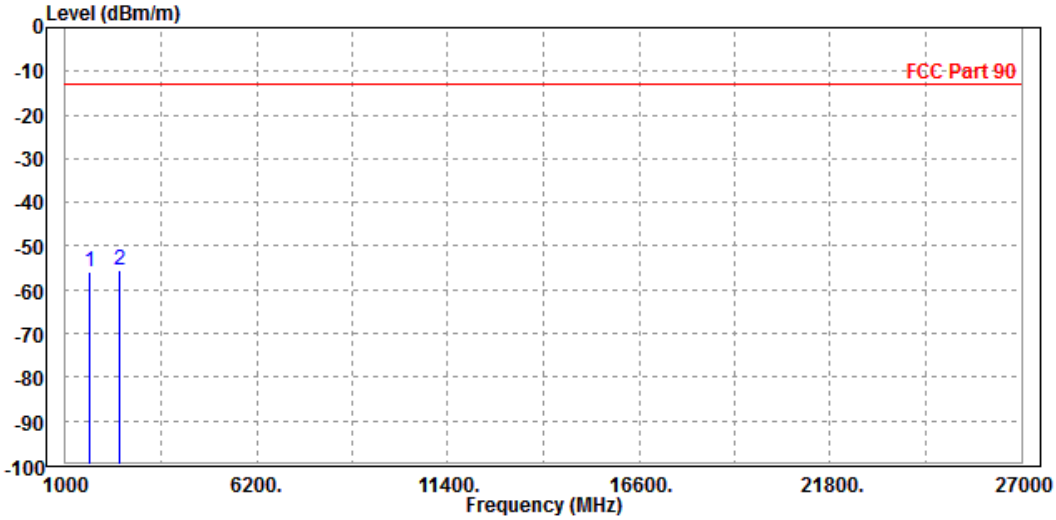
MODE	TX channel 26740	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1638.000	-57.21	-52.16	-13.00	-44.21	-5.05	Peak	Horizontal
2		2457.000	-58.12	-56.45	-13.00	-45.12	-1.67	Peak	Horizontal



MODE	TX channel 26740	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1638.000	-55.95	-52.31	-13.00	-42.95	-3.64	Peak	Vertical
2	PP	2457.000	-55.66	-55.48	-13.00	-42.66	-0.18	Peak	Vertical



4 INFORMATION ON THE TESTING LABORATORIES

We, BV 7LAYERS COMMUNICATIONS TECHNOLOGY (SHENZHEN) CO. LTD., were founded in 2015 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Shenzhen EMC/RF Lab:
Tel: +86-755-88696566
Fax: +86-755-88696577

Email: customerservice.dg@cn.bureauveritas.com
Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.

5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

---END---